Amateur Radio

VOL. 50, No. 11 NOVEMBER 1982
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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

This month's features include:

- ★ ***JOTA 1982 in WA***
- ★ ***Crystal Ladder Filters***
- ★ ***Thermal Soaring***
- ★ ***RD Contest — Opening Speech***
- ★ ***Reviews — AARON Oscilloscope FT 230 R***

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- Greater than 95dB ultimate selectivity
- High dynamic range bipolar r.f. amplifier
- True frequency counter digital readout
- Wide range of optional crystal filters
- Passive double balanced mixer
- Tuning dial calibrated in 1kHz increments

Transmitter

- 150W PEP output for continuous SSB and CW operation
- Optional cooling fan for SSTV or RTTY
- Better than -40dB spurious and harmonic output
- Automatic high VSWR protection
- VOX gain and delay with full break-in CW capability

Other features include —

- Optional Noise Blanker
- RIT switch (allows independent 3kHz adjustment of receiver frequency)
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- Phone patch in and out
- 3 position AGC switch

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amateur radio

. . . in this issue . . .

AOCP EXAMS — 1925 STYLE 49
AMATEUR RADIO IN THE SOLOMON ISLANDS 47
AXIOMS 23
CHARLIE WHISKEY FROM KUALA LUMPUR 17
COMMONWEALTH CONTEST 1982 54
COMPETITION NO 3 WINNER 32
COMPUTERISED LOG FOR THE AMATEUR 33
FOXHUNT SNIFFER FOR 144.250 MHZ 41
GOOF DEPARTMENT 56
HEARD ISLAND — UPDATE 36
HEARD ISLAND COMPETITION 32
HOW LONG AN AMATEUR 43
HOW TO KNOW YOU'RE GROWING OLDER 23
JOTA 1982 — WA STYLE 13
NHULUNBUY — THE GREEN OASIS 43
OOPS 53
RD CONTEST — OPENING ADDRESS 20
RADIOCOMMUNICATIONS BILL 17
SINGLE FREQUENCY CRYSTAL LADDER FILTERS 14
TASMANIA'S YOUNGEST AMATEUR 42
THE LOCATION OF AERIALS ON MOTOR VEHICLES 22
THE PREZ SEZ 25
THERMAL SOARING 18
VK4 OLD TIMERS AGAIN 62
WIA 1983 FEES 13
WIA BADGES 45
WHAT FREQUENCY IS MY RTTY ON? 56

A Word from your Editor 10
ALARA 51
AMSAT Australia 52
AR Showcase 44
Advertisers Index 63
Awards 56
Club Corner 63
Commercial Kinks — Maintenance of Trap Beams 25
Contests 55
Education Notes 49
Equipment Review — YAESU FT-230R 28
Five-Eighth Wave 61
Hamads 65
How's DX 37
Intruder Watch 51
Ionospheric Predictions 64
Letters to the Editor 65
Main QSP 11
National EMC Advisory Service 50
Novice Notes — Filter Capacitors 31
Pounding Brass 46
QSP 54, 55, 64 .....
Radio Amateur Old Timers Club 53
Service Bulletin — FT-ONE Transmit Mod 24
Spotlight on SWLing 57
Test Equipment Review — AARON Oscilloscope 26
Thumbnail Sketches 19
Try This — Schmitt Trigger 30
VHF UHG — an expanding world 58

VK2 Mini Bulletin 60
VK3 WIA Notes 63
VK4 WIA Notes 62
WIA News 12
WICEN News 53

on the cover

Rear (L to R): Ian Gordon, Jill VK6YL/VK6SO. Front (L to R): Joanne Stamp, Bradley Stamp, Mandy Weaver, Tiffany Gunn, Fiona Gordon enjoying JOTA '82 in Jill's shack.

Photo by: Neil Penfold VK6NE

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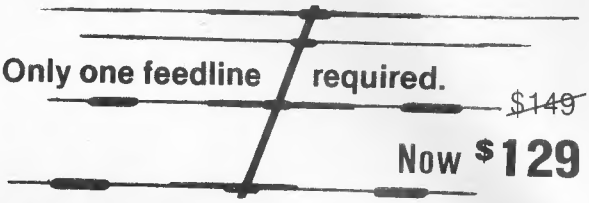

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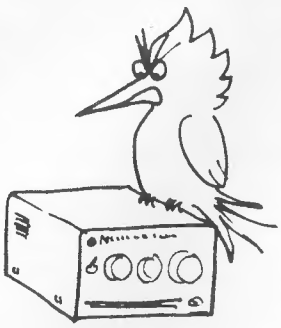

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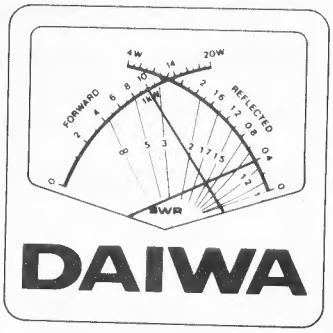

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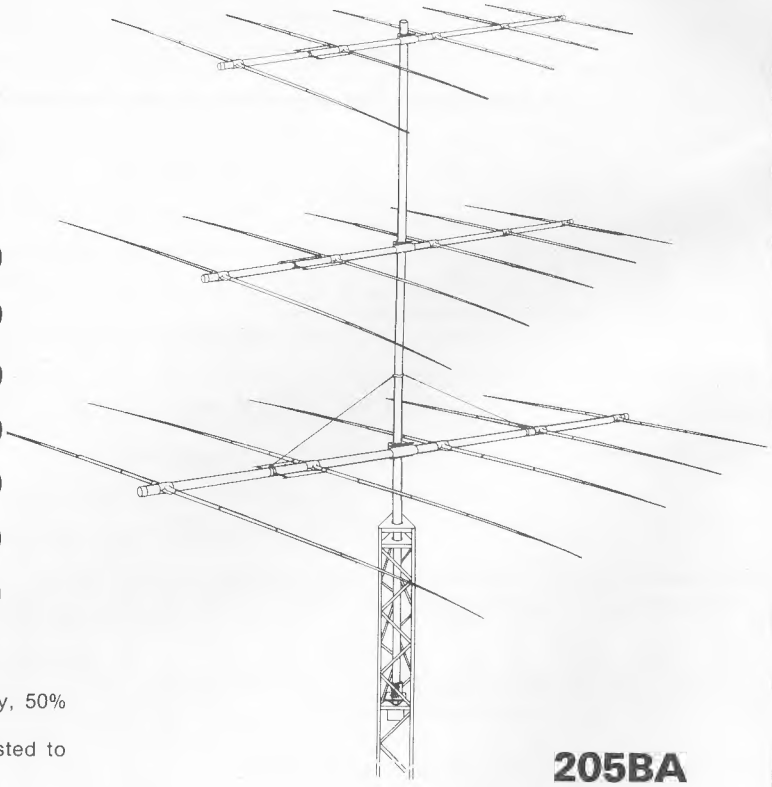

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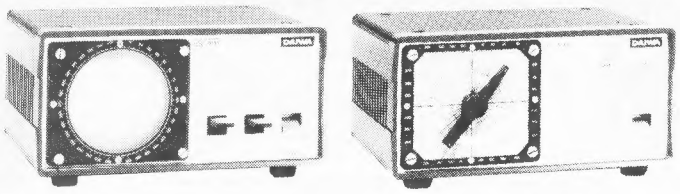

Pre-set controller. **DR7500X, DR7600X.**

Set your antenna with a choice of Daiwa Heavy Duty and Medium Duty Rotators. They'll get you going in the right direction. Type X allows you to pre-set the call area you want and Type R comes with Paddle Switch Control and world map display.

DR7500R Daiwa Ant. Rotator, Medium Duty. **DR7500X** Daiwa Ant. Rotator, Medium Duty, Pre-set. **DR7600R** Daiwa Ant. Rotator, Heavy Duty. **DR7600X** Daiwa Ant. Rotator, Heavy Duty, Pre-set.

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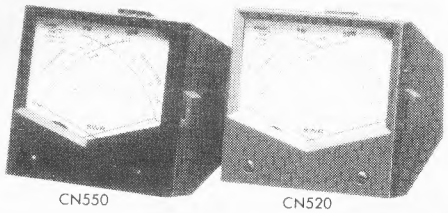

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Hands-off operation.
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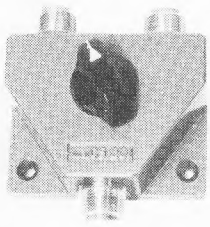

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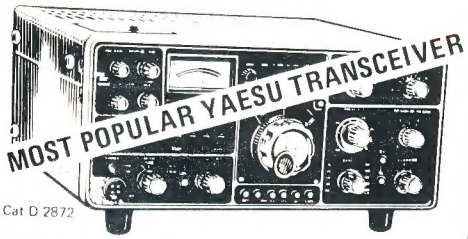

Cat D 2872

SPECIFICATIONS:
Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 and 10m: **Modes of operation:** FM, LSB, USB, CW, AM; **Input Power:** 180W DC (SSB/CW) 50W DC (AM); **Sensitivity:** 0.25uV for 10dB S/N (SSB/CW) 0.4uV (AM); **Selectivity:** 2.4kHz (-6dB) 4.0kHz (-60dB); **Carrier Suppression:** better than 40dB; **Spurious Radiation:** better than 40dB below rated output; **Operating Voltage:** 100-240V AC (13.5V with optional conv.); **Antenna output impedance:** 50-75 ohms, unbalanced

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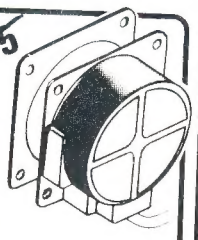

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HF - WARC- TX
Cat. D-2862

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FT101ZD

HF - WARC - TX WITH DIGITAL READOUT
Cat. D-2859

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902 SERIES

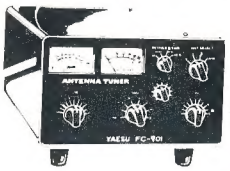
FT902D

Cat. D-2853

SPECIFICATIONS
Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 & 10m
Modes of operation: LSB, USB, AM, CW, FSK, FM
Input power: 180W (SSB), 180W DC (CW), 80W DC (AM)
Sensitivity: (0.25uV for 10dB S/N (SSB)
Selectivity: 2.4kHz (-6dB), 4kHz (-60dB), SSB
Carrier suppression: better than 40dB
Spurious radiation: better than 40dB below rated output
Power requirements: 240V (13.5V with optional conv.)
Antenna output impedance: 50 75 ohms unbal.

~~$1195~~ **$950**

ANTENNA COUPLER



500 WATTS
FC902

Cat D 2855

This coupler can feed anything from a random length of wire to a beam. Match the load perfectly so you can deliver more power up there where it's wanted! Suits all bands, has built-in SWR/power meter as well. 50 or 75 ohm system. 500 watt rating.

~~$265~~ **$195**

MEMORY UNIT

You can get even more use and pleasure from your 902 with the optional memory unit. Instant recall of often used frequencies, repeaters, etc. Cat. D-2858

~~$139.50~~ **$99**

DC/DC INVERTER

Go mobile . . . with the FC902 12 volts inverter. Simple connection, gives 'base station' performance from your car. Cat. D-2856

~~$69~~ **$49**

FT901D

Cat. D-2854

SPECIFICATIONS
Frequency coverage: 160, 80, 40, 20, 15, 10m
Input Power: 180W (SSB), 180W DC (CW), 80W DC (AM)
Sensitivity: (0.25uV for 10dB S/N (SSB)
Power requirements: 240V

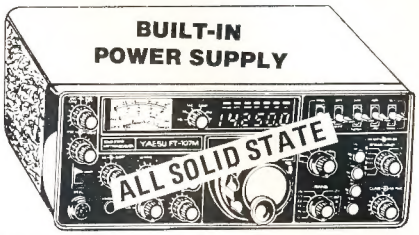
~~$1075~~ **$875**

XTAL FILTER SPECIAL

901/902 - 107 - 707 - 101Z Series
CWN (SD0418), CW (SD0417), AM (SD0416)

~~$33~~ **$24 ea**

FT107 SERIES



FT107M/DMS

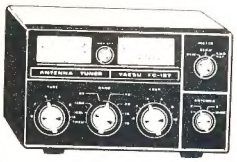
SPECIFICATIONS
Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 & 10
Modes of operation: LSB, USB, CW, AM, FSK
Input power: 240W DC (SSB), 80W DC (AM, FSK*)
Sensitivity: 0.25uV for 10dB S/N (SSB, CW, FSK), 1uV (AM)
Selectivity: 2.4kHz (-6dB), 4kHz (-60dB) SSB cont. variable from 300 to 2400 Hz
Carrier suppressor: Better than 40dB
Spurious radiation: better than 50dB below rated output
Power requirements: 240V & 13.5V supplies are built in
Antenna ouput impedance: 50 ohms unbal.

*Can be modified for novice use

Cat. D-2871

NOTHING MORE TO BUY
Remember, the FT 107 comes ALREADY EQUIPPED with memory unit, AC & DC power supplies, etc: You don't have to spend another cent!

~~$1328~~ **$999**



Antenna Coupler FC107

No problems with antenna mis-match on your FT 107: not with this superb coupler. Designed to match the styling of the FT 107, but also just at home with any transceiver. Huge meters for power output & SWR.
Cat D 2873

~~$205~~ **$185**

~~$299~~ **$269**

TH3JR

TH3JR offers top performance on 10, 15 and 20 metres. The TH3JR has an SWR of less than 1.5:1 at resonance.
Cat. D-4304

YOU WON'T BELIEVE THESE PRICES!!!

2 METRE BARGAINS!

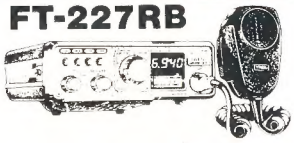
FT-480R

Yaesu's top 2 metre rig: FM, CW & SSB!

Yaesu call this their 'total performance VHF computerized transceiver'. And total performance it is! As the top-of-the-line Yaesu 2 metre family, you'd expect a lot. You get it: FM, SSB & CW over the full 2 metre band, with two VFO's which may be used for unusual repeater splits; four memory channels, scanning, 100Hz resolution on the digital frequency readout, a 'SAT' switch to make satellite operation easy (with an external receiver), a receive clarifier, a hi/lo power switch (30W PEP max), an effective noise blanker, tone burst, priority channels, optical selector coupling . . . If you want the best, you want Yaesu. If you want the best 2 metre Yaesu, you want the FT-480R! As they say: Magnifique! Cat D-2887

~~$589~~ **$445**

FT-227RB



One of the most popular Yaesu transceivers we have ever had the pleasure to operate: the incredible FT-227R. A PLL scanner will take you anywhere within the 2 metre band instantly – just press the scan button on the microphone. No need to worry about reaching for a selector switch in heavy traffic! And you have four memory channels to choose from, with a 600kHz repeater split if for working standard repeaters, or up to a 4MHz split for unusual repeaters or requirements. Power output is ten watts, and the receiver has better than 0.3uV sensitivity (10dB S/N). It operates 13.5V DC, with protection agains reverse polarity and high antenna SWR. For value-for-money, it's hard to go past the FT-227RB. Cat D-2891

~~$379~~ **$299**

FT-207R

~~$358~~

with 10kHz steps

PRICE INCLUDES NICAD BATTERY PACK AND CHARGER

(Cat. M-9517)

$235

Imagine a hand-held 2 metre transceiver with all the punch of the big guns – with digital display, 800 channels, 4-bit CPU chip for frequency control, 4 memory channels, repeater splits, auto scan (up or down), weighing just 680g . . .

You're imagining the unbelievable Yaesu FT-207R!

How does it perform? How about 0.32uV sensitivity . . . or 7.5kHz selectivity (-60dB) . . . or a power output of 2.5W (min). If you've always wanted a 2 metre rig you can throw into a bag to take on holidays, this is it. But a word of warning: don't pick one of these up. You may never want to put it down again! Cat D-2888

FT-720RVH

Yaesu brings you the flexibility and performance you need in today's amateur world. The FT-720RVH not only gives you top performance, it's also the most flexible Yaesu. It comes apart – so you can locate the microprocessor-controlled 'works' close by you, with the 'RF' end out of the way. Or, just as easily, snap the two sections back together again for a complete transceiver. That's versatility! But nothing is spared in performance: PLL circuitry for maximum stability, scanning, five memory channels, LED PO/S meter, 25 W output, and full 144– 148MHz operation. A superb transceiver, designed specifically for today's small cars which simply don't have much room to spare! Cat D-2890

~~$450~~ **$345**

MMB8

Makes mobile mounting of the FT480 a breeze. Why put up with a jury rig when you can get the correct mount at this price? SD1335

~~$21~~

$10

SAVE $11

ALL YAESU WITH FULL 12 MONTH WARRANTY

FREE! MMB5 MOUNTING BRACKET

Yes — absolutely free with the purchase of the FT227RB. SD1267

FL2050 2 metre LINEAR AMP

Cat. D-2547

SPECIFICATIONS
Frequency range: 143.5 MHz - 148.5 MHz
Mode: A1, A3J, A3, F3
Input impedance: 50 ohms unbalanced
Output impedance: 50 ohms unbalanced
Power output: 70 W

~~$239~~ **$189**

PA 2 MOBILE CHARGER

Run your FT207 while mobile — includes 10.8V supply within special holding cradle.

$15.95 Cat. D-2894

BELOW COST SPECIAL

SPECIAL OFFER!

FT-207R & PA2 FOR AN AMAZING

$246.50

FREE EXTENDER CABLE

When you purchase an FT720RVH. The E72L allows you to split the 720 in two: great for compact installation! SD2120. **WORTH $22.00!!!**

WHILE THEY LAST!

MMB3

Mobile Mounting Bracket for FT720 RVH SD2119

GREAT VALUE!

$10.20

IMPORTANT NOTE!

These prices will never be repeated and stock is limited. If you cannot obtain any item, ring Jim Powell in Sydney for help. (02) 888 3200

FT707 SERIES

What a performer packed into such a tiny package! The FT707 is one of our fastest sellers: and no wonder. It's a full power all HF band (including WARC) multi-mode transceiver not much bigger than an average 2 metre mobile! And you get digital display as well. LED S/power meter, push button operation ... all the things the amateur needs for safe and yet reliable mobile operation. But it's more than that: team it up with a FP-707 supply below and it's a superb base station, too. We've waited a long time for a rig like this. Yaesu brought it to you, of course! Cat D-2869

SPECIFICATIONS
Frequency coverage: 80, 40, 30, 20 17, 15, 12 & 10m
Modes of operation: AM, USB, LSB & CW
Power input: 240W DC SSB, 80W AM*
Sensitivity: 0.25uV for 10dB S/N (SSB); 1uV for 10dB (AM)
Selectivity: 2.4kHz (-6dB), 4kHz (-60dB) SSB: 3.6kHz (-6dB) 6.8kHz (-60db) AM
Image rejection: 60dB (80 - 12m); 50dB (10m)
Carrier suppression: better than 40dB
Spurious emissions: at least 50dB down
Power requirements: 13.5V DC @ 20A (240V AC with FP-707)
Antenna impedance: 50 ohms

~~$795~~ **$765**

ANTENNA COUPLER

Get the most from your FT-707: use the Yaesu FC-707 antenna coupler and ensure your transceiver always delivers the power it should. Slim styling suits the FT-707 style, with all the features you need: large power/SWR meter, inbuilt dummy load, all band coverage (including WARC), less than 0.5dB insertion loss (you more than make up for that because of a better match!) Cat D-2875

~~$157.50~~ **$139**

POWER SUPPLY

(and external speaker) Cat D-2895

The FT707 is a great mobile rig - but it's just as good as a base station. Just add the FP-707 mains power supply and you're away. You get a fully regulated 13.5V at 20A - just what your FT-707 needs. Plug in connections so you can't cause problems plus you get an extra large speaker - for greater clarity.

GREAT VALUE

$175

MOBILE BRACKET

Don't let your valuable 707 jump around the car; fit it in a mobile mounting bracket for safety and security. Also holds the digital VFO. A must for the serious mobile operator. Cat D-2897

~~$36~~ **$22.95**

DIGITAL VFO

Cat. D-2896

Long 'n Slim — intended to sit under the 707, 12 memories, up/down scanning in 10Hz steps and receiver offset tuning. Powered by FT-707.

~~$299.50~~ **$245**

MR7 RACK FOR FT707

SD1019

~~$32~~ **$26**

The stores at right stock this complete list of Dick Smith Amateur Radio equipment. All other Dick Smith stores stock some amateur equipment, but may not be able to give you the service of 'Ham Shack' stores listed.

DICK SMITH HAM SHACK

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W01104

a word from your EDITOR

Printed in our DX notes is a current report on the "VK6 DX Chasers Club" expedition to Heard Island.

Of course we have heard rumours of the possibility of a **second** and separate expedition to Heard Island.

This is the "Heard Island DX Association" (HIDXA) led by Jim Smith, VK9NS from Norfolk Island.

Until recently we believed no serious plans had been made; however over the past few weeks Jim Smith VK9NS has told us that he has now been able to arrange a definite departure for Heard Island.

He tells us:

1. The whale chaser "Cheymes II" has been booked to leave Hobart on 1st January 1983.
2. Official permission from the Australian Government has been given for the HIDXA group to land on Heard Island for a period of no less than 14 days, but not exceeding 30 days.
3. The expedition will consist of 18 members, comprising eight amateur radio operators and 10 scientific investigators.
4. Operation will be on all bands through to 6 metres using CW, SSB, RTTY and SSTV.
5. Call-signs to be used will be VK0JS and VK0NL.
6. A large amount of funding and donations of equipment and supplies has been made available from various groups and personal contribution of the expedition members themselves. The expedition still requires support from amateurs, and donations may be sent to: HIDXA P.O. Box 90, Norfolk Island, South Pacific 2899.

Some people have mistakenly believed that the Wireless Institute of Australia (WIA) has underwritten the VK6 DX Chasers Club Heard Island expedition. This is **not** the fact. No WIA Federal funds have been advanced or promised for this expedition or any other expedition.

The Federal Executive of the WIA believed that it was proper to encourage this expedition, and it has done so through the pages of AR.

Naturally the WIA is anxious to see that all expeditions do not become the subject of criticism. QSL's are an important aspect.

Thus there is now the extraordinary possibility of two groups of amateurs operating at the same time from this much sought after DX country.

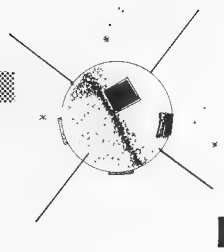
It is hard to believe that an amateur operating from Heard Island may have to face problems of local QRM. They may well need the same tolerance of each other as amateurs operating in a suburban area.

Only two months now remain before the expeditions set sail, and there is still a lot more work to be done and final preparations are yet to be made.

We wish both groups success and a safe return.

Information will continue to be published in AR as it comes to hand.

Bruce R Bathols VK3UV
Editor



QSP

BEYOND 2000?

I recently caught part of "Towards 2000" — the ABC television programme which featured satellite research and the development of "killer" satellites — most enlightening to say the least!

Satellites have certainly revolutionised man's ability to communicate and the future holds much more.

However, the possibility, that the "basket" containing all the eggs, being destroyed is an awesome thought, especially in the case of societies or countries with access to only a limited number of communication satellite systems.

Towards 2000 left little doubt that there are at present many great minds already hard at work developing the so called killer satellite.

To date, little mention has been made of the possibility of jamming communication satellites. Even given the myriad of so-called safeguards, it will surely happen — just as some of the major political powers purposely jam each other's short-wave broadcast outlets. A futile exercise. And yet those same broadcasters demand more and more spectrum!

Most amateurs have experienced wilful VHF repeater jamming practices whereby a suitably located transmitter can render a repeater useless. Perhaps the day will come when similar actions are perpetrated at much higher levels, i.e. by governments and thereby render great sections of a country's communications network inoperative — perhaps even with a view to immobilising its defence communications.

With all this in mind, the HF spectrum may not be the "cast off" that so many were earlier predicting. To be able to use relatively simple independent and portable equipment, to reliably communicate over medium distances such as across a country's boundaries, or indeed across a continent, would not have gone unnoticed by defence planners amongst others who require the maximum reliability for communications networks.

With WCY-83 and its theme "development of communications, infrastructures" just around the corner we should be even more diligent in our approach to the preservation of our amateur bands.

As always we should "use them or lose them."

Peter Wolfenden VK3KAU
Federal President WIA **AR**

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WIA NEWS

The information in the letter reproduced is the result of negotiations between the WIA and DOC.

DEPARTMENT OF COMMUNICATIONS

TELEPHONE: (03) 609 1555
TELEX: SECPAT 30148

ENQUIRIES

GPO BOX 5412CC
MELBOURNE, VIC 3001

REFERENCE.

- 6 OCT 1982

Mr. P. Wolfenden
Federal President
Wireless Institute of Australia
P O Box 150
TOORAK VIC 3142

Dear Sir,

As a result of the recent negotiations between representatives of the Institute and Departmental officers, I am pleased to confirm the following revised examination exemption provisions:

- Examination pass credits will be retained for two years.
- Licensed amateurs who are candidates for higher sections will retain examination credits (including Telegraphy, Sections LS and LR) indefinitely.
- A previously unlicensed person, who obtains a licence during the validity of a pass, will continue to retain that credit indefinitely.

The new exemption provisions take effect immediately. They will also apply to those candidates who have recently contested examinations, subject to the following conditions:

- Candidates who gained passes within the last two years, upon application, will be credited with an exemption for two years from the date the pass was obtained in a particular subject.
- Novice and Limited (or Combined) amateurs who were candidates for higher sections, upon application, will also be credited with those passes obtained within the last two years. These credits will be retained permanently.

It would be appreciated, please, if you could arrange for these new provisions to be publicised through the Institute's usual channels as soon as is practicable.

Yours faithfully,

for Secretary.

NOTE:
The onus is on all candidates in past examinations to apply to their State DOC office for credited exemptions.

Peter Wolfenden, VK3KAU
Federal President

JAMBOREE ON THE AIR 1982

Gillian Weaver VK6YL
23 Corbel Street, Shelley 6155

During the weekend 16th and 17th October 1982, the Amateur Radio bands came alive with young voices excitedly talking to other Guides, Brownies, Scouts and Cubs throughout the world to celebrate the 75th Anniversary of Scouting, the 25th Anniversary of JOTA and the 125th Anniversary of the birth of Lord Robert Baden Powell of Gilwell (affectionately known to us all as "BP").

On the regular official VK6 Broadcast on Saturday night, the Chief Scout for Western Australia, His Excellency Sir Richard Trowbridge, Governor for Western Australia gave the address passing greetings to all members of the Scouting and Guiding Movement and to the amateurs taking part. This was the first time His Excellency has graced us with his presence and it was to mark the quarter century of JOTA. The amateurs of course were particularly proud because he is also the Patron of the Wireless Institute of Australia, Western Australia Division. The Governor was most interested in the call-backs coming from all over our vast State.

Official figures are not yet to hand but it appeared there were in the order of 100 participating amateur stations in VK6 alone with around 140 amateurs operating. These amateurs played host to over 2500 uniformed members of the Movements with a large number of visitors who were also introduced to amateur radio. Participation cards for the amateurs will be distributed by the Assistant Branch Commissioner for Scout Radio, Peter Hughes VK6HU, with thanks from the various Scout and Guide units who enjoyed their company.

VK6SAA, the Official Scout Station, operated for the first time in the State Headquarters Building in the centre of Perth with wire antennae in the roof (to avoid TVI!!!). Another first was the Official Girl Guide Station VK6GGA which operated from Paxwold in the Helena Valley, where 432 MHz Foxhunts were run much to the delight of the girls. Numbers of groups were in District Camps for the weekend with the young people combining amateur radio with other skills — for example Pioneering — building towers for aerials etc.

During this and the previous JOTA's many memorable events happened . . .

In the country the Cuballing Girl Guides visiting Malcolm VK6XM had a most unusual guest to the shack — a five foot long carpet snake! On the International Scouting Scene overseas stations, who take the trouble to explain their customs and geography, play a wonderful part because of the isolation of VK in the world. Stations like ZE1JAM in Zimbabwe at the site of BP's great military exploits and Frank VK9NYG together with Mike VK9ZYX who explained the fascinating wonders of Utopia, Cocos Keeling Islands. New pen pals from all over the world have grown through JOTA. These leave lasting effects on the participants especially when memorabilia is exchanged from parts of the world basically unknown to us.

In 1979/80 Perth played host to the 4th Asia-Pacific, 12th Australian Jamboree to which 11,000 Scouts from all over the world attended together with 2500 helpers. During the 10 days the WIA WA Division assisted the Scout Movement to mount the largest-ever amateur radio exercise in VK. This comprised three HF stations, two VHF stations, 1 RTTY station, 2 Workshops and a Broadcast Station 6SJ on 1610 kHz, also the first-ever licensed TV station on UHF was launched in Western Australia.

Over the years Jamboree on the Air has meant the union of the young Scouts and Guides and amateur radio. The youth enhance their communication skills and of course it is from their ranks that the amateurs of tomorrow will come.

SUBS RATES AND JOINING FEES 1983

	ACT	NSW	VIC	QLD	SA	WA	TAS
	$	$	$	$	$	$	$
Bona Fide Student	21	22	20	11	18	19	9.75
Pensioner	22	22	22	22	24	24	20
Ass. Member (No Callsign)							
Met	30	27	28	27	32	29	28.5
Country	30	27	28	27	30	29	28.5
Full Member							
Met.	30	29	32	27	34	30	28.5
Country	30	29	32	27	32	30	28.5
Plus Joining Fee	—	3	—	3	—	—	1

Family Member (e.g. wife) without AR — deduct 12.15 from appropriate full or ass. rate, except:—
ACT — 18, VIC — 15, QLD — 11, SA — 17.

WARNING!!

Disposing of your old rig??

Please ensure it goes ONLY to someone licensed to use it on YOUR bands.

Single Frequency Crystal Ladder Filters

Rob Gurr VK5RG
PO Box 35, Daw Park 5041

The abovementioned filters have been around for years in various applications, however it was not until 1976 that anything of a practical amateur nature was mentioned in any amateur publications. Then Pat Hawker G3VA wrote in his Technical Topics column of Radio Communications, September 1976, page 672, of experiments conducted and practical results achieved by F6BQP. The attraction was that with all of three or four crystals, ON THE SAME FREQUENCY, single side band filters comparable to manufactured types could be fabricated in the amateur station.

The main claim was the extremely low out-of-band spurious responses. G3VA was later followed up by impressive articles by G3JIR, then later by an English translation of the article by F6BQP.

One feature of the literature was the almost predictable bandwidth and pass-band ripple associated with this type of filter. Armed with a copy of the respective articles, a supply of crystals of various cuts and holders, and some elementary test equipment, I endeavoured to duplicate some of the successes obtained by other authors. The results were very pleasing and are recorded for information of those interested in duplicating such filters.

A good source of crystals, all on the same frequency, in the 8, 9 or 10 MHz range may appear difficult at first, however any old CB transceiver or 27 MHz hand phone service organisation should be able to assist.

The author can obtain, on request, brand new style 27 MHz crystals at $12 for a set of 10, allowing two filters, complete with carrier crystals for USB and LSB to be constructed. In addition, Air Force disposals crystals in the B holder can be supplied at $4 a set of 10, all on the same frequency, in the 6, 7 or 8 MHz bands.

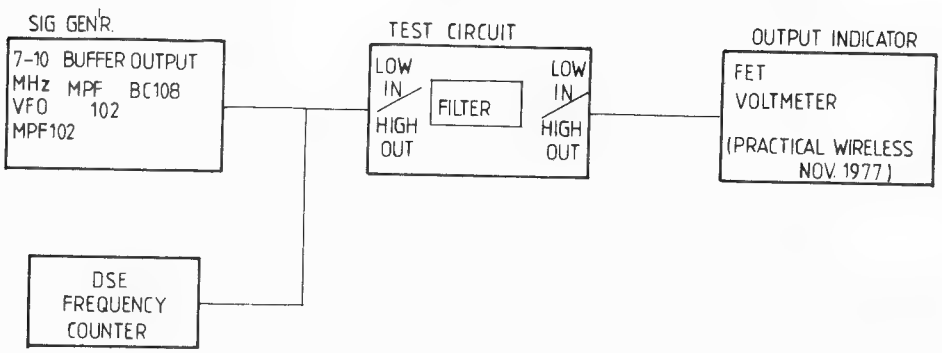
The tests indicated the difference between a three section or four section filter using style K was marginal, however the B style (disposal) showed a definite lower side band preference in the three crystal configuration. This was not greatly improved with a four crystal set-up.

TEST EQUIPMENT

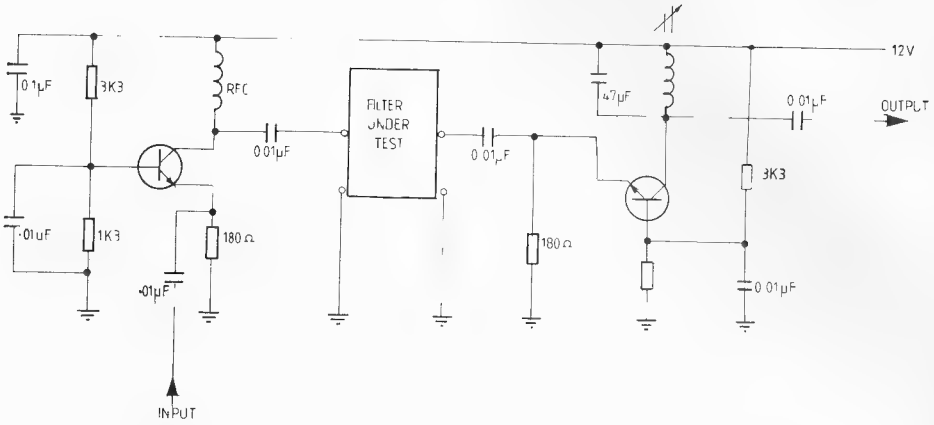
Access to elaborate test equipment is possible to some of us, however the set-up used in my tests could be duplicated by any experimenter with little trouble.

The layout is as follows:—

(a) SIGNAL GENERATOR



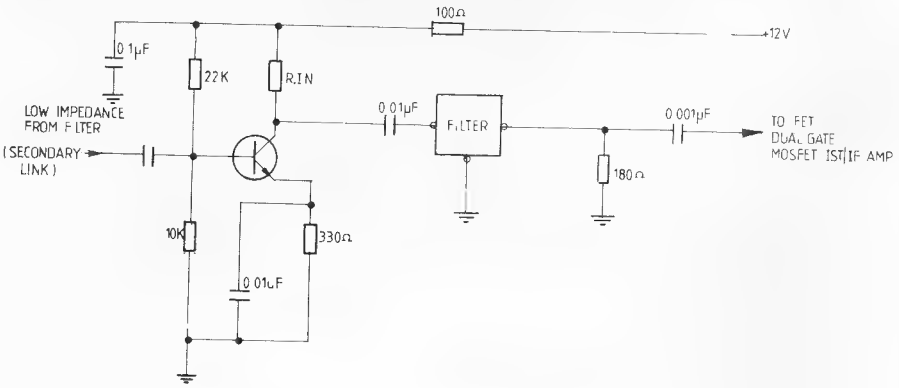
(b) TEST CIRCUIT



The test circuit was laid out on an 8 in. x 3 in. slab of double-sided printed circuit board — coupling between parts was negligible, and allowed measurements down to —42 dB without difficulty.

FINAL PRACTICAL CIRCUIT

Very few modern transceivers or receivers do not include a pre-amplifier between the mixer and crystal filter — a few tests were made, and the use of a pre- and post-filter amplifier is recommended as follows:—

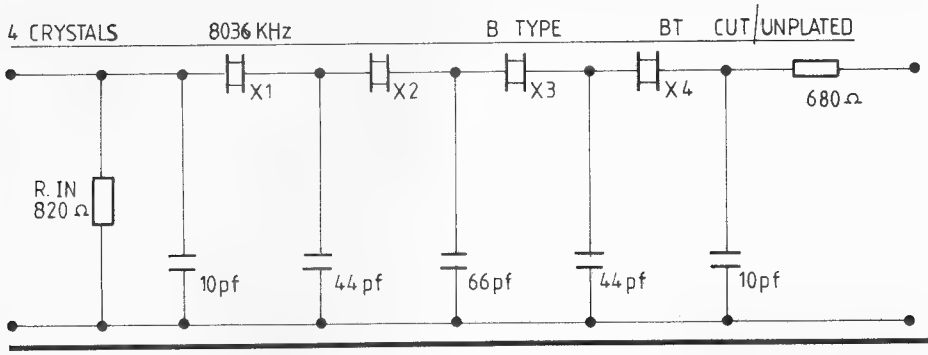


FILTER CONSTRUCTION

The crystals are mounted in adaptor holders for use in D type sockets or banana types as appropriate; these mounted on dual sided PCB, trimmed flush, with sides and bottom eventually (after test) soldered up "water tight". I used PTFE feed-throughs for input and output leads at each end of the boxes. Constructed in this way, the prepared filter using K type crystals was smaller than a "McCoy" or "Pye" used in previous projects, and mounts easily on the VK3AFQ "Building Blocks" board (AR August 1975).

No shielding is used between sections — an elaborate lash up with miniature panels, lead throughs, etc., gave no better results.

SOME USEFUL CIRCUITS

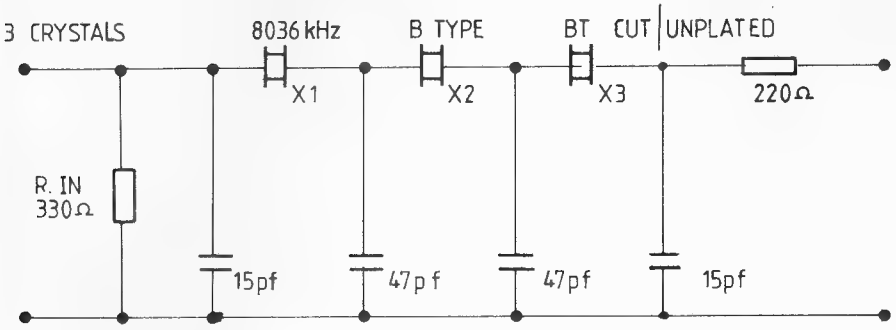


Bandwidth:—

3 dB	1.0 kHz
6 dB	1.2 kHz
30 dB	3.5 kHz

Symmetrical to beyond 40 dB.

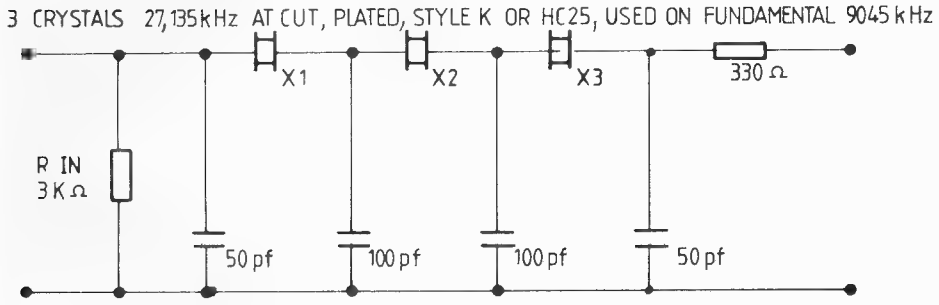
Application:—
Narrow band RTTY or broad band CW.



Bandwidth:—

3 dB	1.2 kHz
6 dB	1.6 kHz
30 dB	6.4 kHz

Application:—
Very narrow band SSB transmit only.
The asymmetrical response makes it suitable for application to lower sideband use only, where high frequency cut-off can be controlled by audio-response.



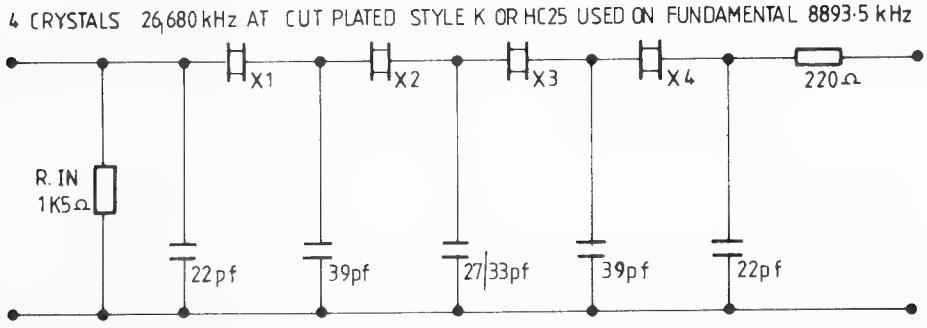
Problem:—
A small spurious spike only at +6 kHz at —40 dB.

Bandwidth:—

3 dB	1.9 kHz
6 dB	2.2 kHz
30 dB	5.9 kHz

Symmetrical to beyond 40 dB.

Application:—
Normal USB or LSB use in place of any commercial or home built lattice filter.

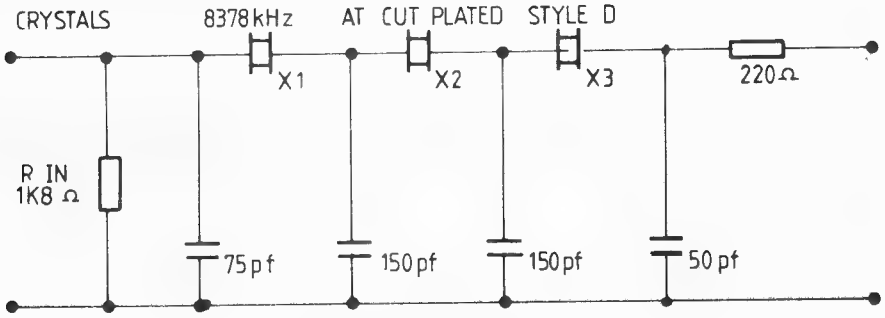


Bandwidth:—

3 db	2.1 kHz
6 dB	2.8 kHz
30 dB	5.9 kHz
40 dB	7.5 kHz

Symmetrical to beyond 50 dB.

Application:—
Normal SSB service in place of commercial filters in home built projects.



Bandwidth:—

3 dB	2.4 kHz
6 dB	2.6 kHz
30 dB	5.8 kHz
40 dB	7.0 kHz

Application:—
Normal SSB service to replace any commercial filter in home built projects.

CRYSTAL OSCILLATOR

The literature gave two alternatives to ensure an extra crystal, cut for the same frequency as the filter, could be pulled for use as both lower and upper sideband carrier frequency. I had success with both, so they are shown with my values below for interest.

MATCHING

The input resistor shown on each filter circuit is its INPUT IMPEDANCE — the pre-filter collector load should be of this value and no resistor included in the filter input.

COMPONENTS

The earlier articles specified 2 per cent tolerance silver mica or styroseal capacitors. I used what was available, mostly 5 per cent N750 ceramics. Resistors used were 10 per cent ¼ and ½ watt and values selected with moderate care, as I was seeking to examine flexibility of values.

FURTHER EXPERIMENTS

The original articles described more elaborate 6 and 7 crystal filters — some were tried; however, the 3 and 4 crystal circuits appear to be adequate for most current amateur applications.

The results obtained with the plated AT cut crystals (K and D style) were so satisfying, an attempt to use a group of plated BT cut (B type metal holder) crystals was made. The bandpass ripple (more than 3 dB) and narrow bandwidth obtained does not warrant publishing the results at this stage, however I hope to continue with these later.

OVERTONE TYPES

A crystal that oscillates on, for example, 27.135 kHz, has a fundamental series resonance of about 9045 kHz. This is the frequency at which maximum attenuation on the lower side of the bandpass is obtained — bandpass centre frequency becomes 9050 kHz.

LATTICE FILTERS

After the construction of a number of these filters, the author regrets being diverted over the years to experiment with lattice filters using FT243, etc., styles — these ladder types are more reliable and simpler to construct.

ACKNOWLEDGEMENTS

When one starts an experimental adventure into such well proven items as SSB crystal filters, few of today's amateurs care to share your enthusiasm — it's already being done with lattice types, etc., etc. One who assisted me with enthusiasm, linformation and crystals was Clem Tilbrook VK5GL, and Paul Lawson VK5SL supplied some articles and technical discussion. My thanks to these particularly and also my other contemporaries who help keep my component resources afloat, for such experimental projects.

FURTHER READING

Making Crystal Ladder Filters, G3VA — Rad Com., September 1976.

Some Experiments with High Frequency Ladder Crystal Filters:—

Part 1, G3JIR — Rad. Com., December 1976.

Part 2, G3JIR — Rad. Com., January 1977.

Part 3, G3JIR — Rad. Com., February 1977.

Part 4, G3JIR — Rad. Com., September 1977.

Ladder Crystal Filter Design, G3JIR — Rad. Com., February 1979.

Crystal Ladder Filters Again, G3VA — Rad. Com., June 1977.

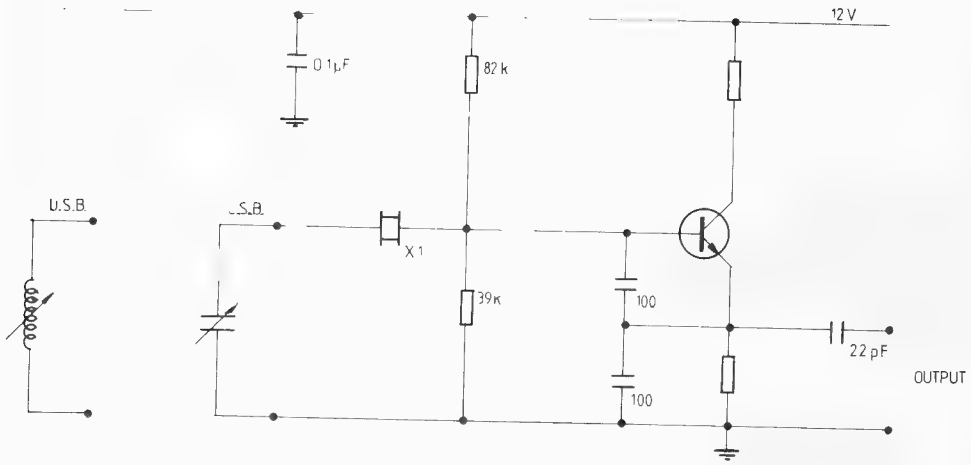
Carrier Frequencies and SSB, G3VA — Rad. Com., August 1977.

Crystal Ladder Filters, F6BQP — Wireless World, July 1977.

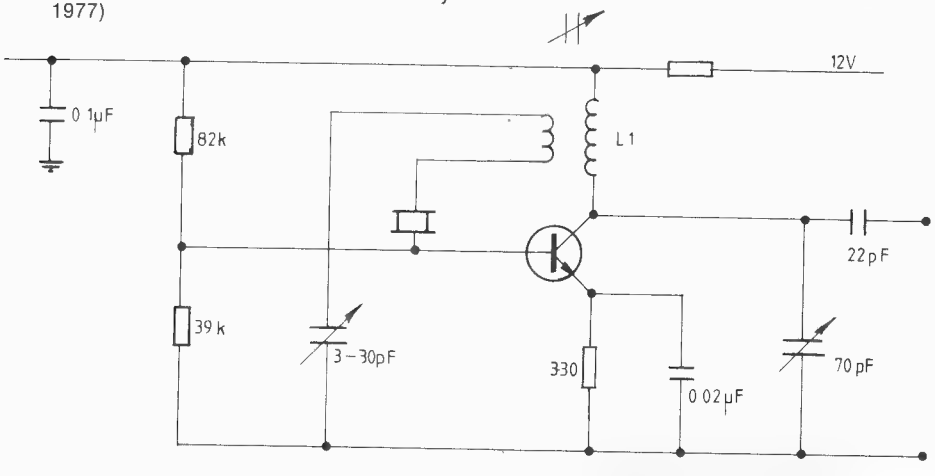
Some Experiments with High-frequency Ladder Crystal Filters, G3JIR — QST, December 1978.

Ladder Crystal Filter Design, G3JIR — QST, November 1980. ■

(a) F6CER (Radiocommunications August 1977)



(b) G3JIR (Radiocommunications February 1977)



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A young woman teacher at a school in an inner city suburb found herself in a class with a high proportion of immigrants. While getting to know the children she asked one little boy his name. "Julie," he replied. "Ah," said the teacher. "You mean Julius. We always use the full name in my class." And turning to another little boy, she asked, "And what's your name?" The answer came back like a shot, "Billious!"

—From "The Clubman" Aug '82

AR

Nara 9M2LN (on left) and Hock 9M2FR.

CHARLIE WHISKEY FROM KUALA LUMPUR

Arthur Pritchard VK3DPA
45 McCulloch Street, Nunawading 3131

Many Australian amateurs owe much of their success to the generous help received with theory and morse code, the majority of it made available from most Australian states.

Through the Wireless Institute's slow morse sessions and education programmes throughout the country, theory and morse code is finally mastered.

As well as our own clubs, some overseas operators give much valuable time and patience in helping many of us reach "full call" standard.

Such assistance comes from one of our close neighbors Nara 9M2LN whose valued contribution in the form of regular seven days a week CW sessions is to be admired.

The success rate of his pupils is high and they include YL's, XYL's and OM's young and old.

Recently Nara has been assisted by Hock 9M2FR, known affectionately as "Father Robert".

It all began in February 1979 with Nara operating a variety of equipment including KWM2A TXCVR; FTDX100 TXCVR with 500 watt linear into TH6 DX antenna at 13 metres. Morse keyers used by Nara are Pickering KBI and Spacematic 2IB.

Nara's QTH is Ipoh on the Malay Peninsula and the very first classes went to air on February 9 1979. The novice stations in the group were Tricia VK6NFP, David VK5NDV, Trevor VK5NTT, Mike VK3NUQ, Ian VK6NGI, Pam VK6NGJ, Pat VK6NHP, Len VK6NLP and Wally VK6NYS, and of course countless SWL's.

As time passed many others joined in and it was not uncommon to have up to eight or nine stations on frequency able to call back.

The session is still operating seven days a week at 0200 UTC on 28.490 MHz ±QRM. Newcomers are naturally made very welcome whether it be for three, five, ten or fifteen words per minute; assistance is available also in sending morse as well as receiving.

Nara and Hock have many years of telegraphic experience behind them. Nara began with the Boy Scout movement back in 1931, leading to training with DOC Kuala Lumpur in 1938. With the war years he was involved with the Royal Corps of Signals, and telegraphic training of personnel.

After hostilities ceased, Nara returned to training programmes with the Telecommunications Department up until 1978.

Nara was first licensed in May 1947 as VS2CN and later in October 1959 became 9M2LN. Looking back Nara can chalk up 45 years of CW experience.

Hock has been an amateur since 1957.

Both good family men and grandfathers, Nara and Hock seek nothing more than to enjoy the pleasure and satisfaction of being able to help others. The biggest thrill they say is to hear of a candidate's success at recent examinations. May we wish them continued good health and good luck for the future.

AR

Hock 9M2FR's 2 element Quad.

RADIOCOMMUNICATIONS BILL

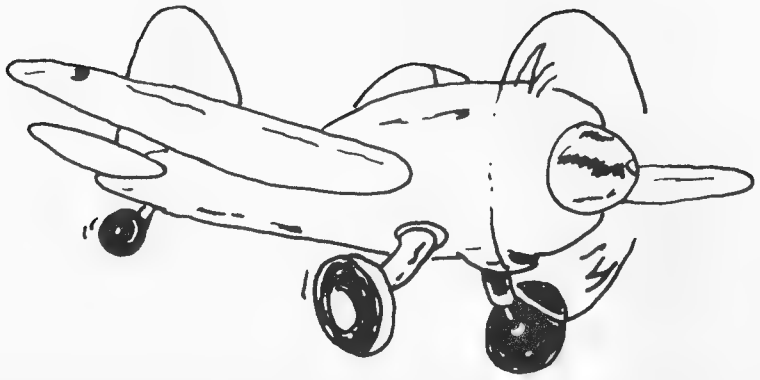
AN EXTRACT FROM THE SPEECH BY THE MINISTER FOR COMMUNICATIONS THE HON. N. A. BROWN, Q.C., M.P. at the AUSTRALIAN COMMUNICATIONS LAW ASSOCIATION, SYDNEY. 2nd September, 1982.

The proposed Radiocommunications Bill will introduce substantial reforms to the administration of the Radio Frequency Spectrum. I have to say that the proposed bill may increase the regulatory powers of the government in some respects. Without proper regulation, radio equipment may interfere inadvertently with the use or enjoyment of public or private services. A common complaint is that of private radio equipment interfering with reception of radio and television services.

In other cases, the use of equipment such as electric drills and welders can cause severe interference to the television services in neighbouring houses.

These complaints are costly to investigate, and in some cases we are powerless to act and prevent the interference continuing.

One of the reforms which the new Radiocommunications Legislation will probably propose is to authorise the minister to approve standards for all transmitters and certain classes of receivers. The proposed legislation would make it an offence to supply, possess or import such equipment which does not meet the standards determined.



THERMAL SOARING

Written by.

Marv Gonsior, W6FR

418 El Adobe Pl. Fullerton, CA 9263

Adapted by:

Roger MacRury

Meteorological Office, Canberra Aust.

Amateurs world wide are always in the forefront of experimentation. This article illustrates how some amateurs in America use a portion of the 50 MHz amateur band to combine two hobbies.

The original submitted text has been adapted by Roger MacRury, a part-time Gliding Instructor with the Canberra Aero Club.

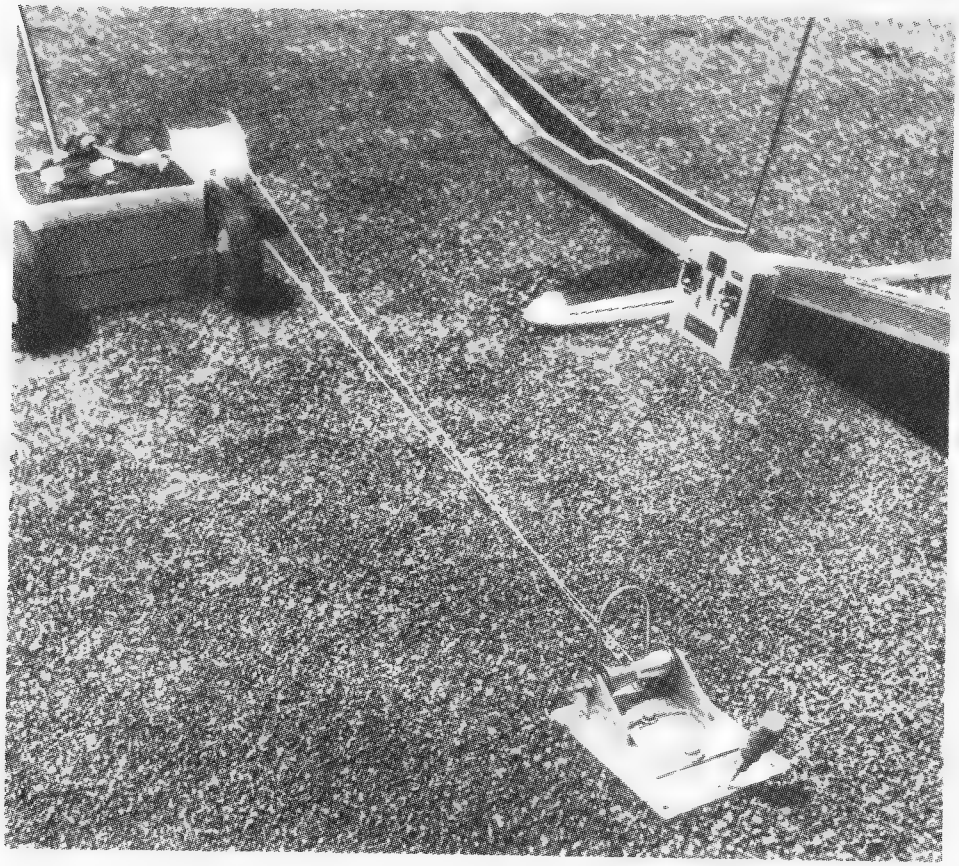


Fig. 1: Basic RC system: the radio transmitter's frequency is crystal controlled with plug in modules. The power winch for launching and the glider are in the background. The glider has three channels for control, rudder, elevator and spoilers. The wing span is 11 feet 3 inches and weighs about four and a half pounds.

Amateurs in the US enjoy a privilege of being authorized use of the 50 MHz band for use in Radio Control hobby activities such as sail and power planes, boats, and cars. Non-amateurs are required to operate with a licence in a non-exclusive Citizens Band allocation from 72.1 MHz to 75.64 MHz on ten frequencies. Aside from the less crowded, QRM'd situation, being able to utilize the 50 MHz band allows us total freedom to select individual frequencies, generally at the high end, and eliminates waiting to use a particular frequency if that one is already in use by another sport flier; for instance, one who is enjoying a great thermal with his sailplane up about 2,000 feet as is sometimes the case. Under outstanding thermal conditions, one may stay aloft for 30 to 60 minutes with ease, in a situation like this, with some skill and good fortune.

My particular aspect of the RC hobby is thermal soaring.

It is probably true to say that thermal soaring of models provides the greatest challenge. During the day, incoming short wave solar radiation heats the earth's surface; the heated ground then heats the lower layers of the atmosphere. This warm surface air then rises as thermal streams or bubbles and is known as convection. Thermal currents cannot be seen and the problem for model gliders is to find the next thermal before all altitude gained in the previous one has been lost.

Many also enjoy slope soaring.

This method of soaring requires a ridge or mountain range with the wind blowing perpendicular to and over the range. In this instance, the sailplane soars by flying in the section of the air stream that rises smoothly over the mountain.

Slope soaring forms a significant proportion of model glider activities. The technique involves flying "beats" parallel to butt ahead of the ridge, so that the model remains in the ascending section of the airflow over the ridge. Models can soar as high as 2000 feet with a 700 or 800 feet ridge and a 25km/hr wind. It is possible to go higher, but it then becomes very difficult for the pilot of the model to actually see and so control the model glider.

A special instrument called a variometer is used by full size gliders to give an instantaneous read out of the rate of climb or

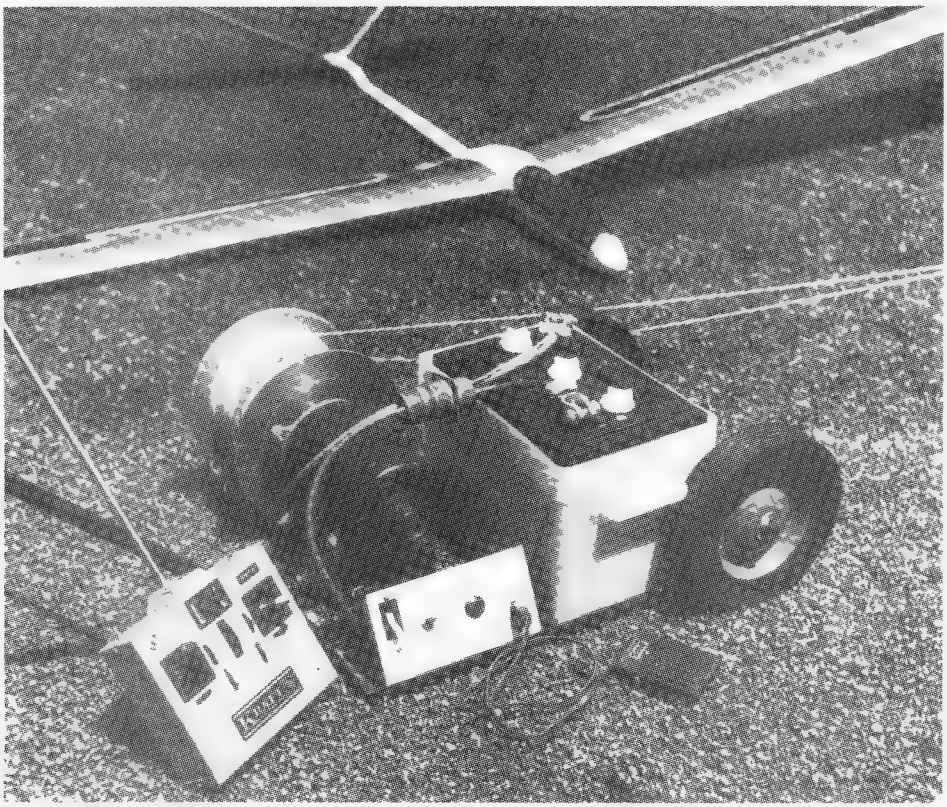


Fig. 2: A view of the "turn around" (foreground) which facilitates the pivot point from the far end of tow-line for launching.

descent of the aircraft. It is an essential piece of equipment in a full size glider and only the most exceptional pilots are able to achieve limited "soaring" without it.

Recently solid state pressure transducers have become readily available; so a miniature on board variometer which sends its readings via radio telemetry to the model pilot should be within the abilities of an enthusiastic radio/aero modeller to construct.

This would extend the potential of any 'soaring' model and be a significant challenge to its builder.

Surely, both forms of RC sailplane flying will be found in VK, as RC flying is a sport enjoyed by many amateurs in the US as well as everywhere in the world. It is surprising to find wide-spread the popularity, judging by just the results from a number of casual conversations over the air. The hobby gives one a wonderful, relaxing way of total distraction from life's problems while your bird is up in the sky. Sometimes a curious hawk or seagull will keep the glider company for a while up there, too. Trying to catch one of them is an impossibility, but it's a real challenge trying!

This hobby offers a unique opportunity to combine construction skills with the associated electronics from amateur radio and is a great father and son pastime, which is how I got started about seven years ago. My son went on to other things; I stayed with my new-found hobby.

AMATEUR RADIO AND MODEL CONTROL

Launching, for thermal soaring, may be accomplished by stretching to about 900 feet, a line consisting of 100 feet of quarter-inch surgical rubber tubing and 400 feet of nylon fishing line as a giant rubber band, called a High Start, or, better yet, a lead-acid battery operated winch system as shown in figures 1 and 2, which will tow the glider up to about 600 feet, enabling one to search out the sometimes elusive thermal. What a thrill it is to be towed directly into a booming thermal right off the launch which sometimes occurs! Under these conditions, the glider will rise almost vertically with surprising speed whereas usually it will slowly rise in wide circles, following the flow of the funnel-like pattern of a typical thermal.

The purpose of this article is not to provide a long detailed description of the hobby, but to give a snapshot view of an interesting offshoot of amateur radio. The investment to get started here is about $300, about one-half of which is for the radio gear, if purchased new, much of which comes from Japan. The glider kits range in price from $25 to $150 US complete, depending on size, quality, etc. You can also build a glider from "scratch" but that should be done later as progress indicates. Of course, some small tools are required and are not too expensive if one sticks to the hand variety.

There are usually sport flying clubs where instruction may be obtained as well as library books to be read. A number of monthly magazines are published here and I would assume elsewhere. This is not a hobby as simple as it looks. It requires a number of learned skills in judgment, touch, assembly techniques, and general perception of winds, thermals and a lot of patience and practice. There is a generous number of amateurs flying RC with many tournaments, etc. There are also some international contests. A surprising number of amateurs like myself, built airplane models in earlier life and will find this a welcome renewal of an old flame, combining a number of aspects of each into new skills for a most enjoyable hobby. Happy landings and 73.

AR

THUMBNAIL SKETCHES

FRANK J. CAREY, The Singing Spark of Australia

Frank, who supplied the following details, was one of 12 children. He was born near Toowoomba in 1904, and the family were neighbours of Steel Rudd. Frank overcame many difficulties, working as a canecutter and railway fettler, to further his interest in "wireless", studying at night as a teenager.

About 1917, with the help of professional "brass pounders", Frank built a "wireless set", which has a prominent place in the Queensland Museum and which has a history in its own right. Frank did not see much of this set as it was confiscated. Frank later went to sea as a merchant marine ship operator.

A memorial plaque in Toowoomba commemorates the first experimental "wireless" telephony transmission between Toowoomba and Melbourne in 1921 by Messrs. Bright and Carey.

The Melbourne operators were A. S. McDonald, J. G. Reed, C. Tapp and R. Alsopp.

Life membership of the American Society of Wireless Pioneers and the Institution of Radio and Electronic Engineers (Sydney) has been granted to Frank.

WW2 saw Frank ("Tex") as a member of the "3" Squadron RAAF. Frank, now living in Sydney, is well known on the Coral Coast net as VK2AMI.

AR

RD Contest — Opening Address

Opening Address at 1982 Remembrance Day Contest by The Hon. David Jull, M.P., Member for Bowman, and Chairman of the Back Bench Communications Committee.

Thank you very much indeed for your kind invitation to open the 1982 WIA REMEMBRANCE DAY CONTEST. It's indeed a great honour and a further step in cementing our close associations — associations that I really do appreciate. Today we should remember the service of those amateurs who gave their lives in the defence of their country during World War 2, and I'm sure those dedicated and brave men would be proud to know that it is in this form that the Institute remembers and pays tribute to them.

Although we are at peace, it's a fragile peace, but I'm sure that if ever there was another emergency forthcoming, and I trust it never will, no doubt the skills and dedications of the amateurs would be very much to the fore.

What never ceases to amaze me, is the enthusiasm of the members of the WIA and the fact that through their operations they manage not only to maintain links of mutual friendship throughout Australia, but indeed throughout the world. What great ambassadors for Australia your members can be, and indeed have been, in the years past. I'm sure we'll all remember the work of the amateurs in times of national and international emergencies. Speaking from Brisbane, my mind goes back to the tragic 1974 Brisbane floods. As a working journalist at that time, I was acutely aware of the work that was being done by your members at what was probably one of the most crucial times in this city's history. It's important, of course, that your work continues. Technological changes are always with us and we are indeed on the verge of a communications revolution. I know that your members do study these changes, and indeed make a very great contribution to the continuing technical debate in the 'halls of power' in Canberra, especially in the formulation of new legislation. You will be aware that urgent changes are required to the W. and T. Act. The advice of the Institute is being considered, and it is hoped that we will see amendments presented to the Houses of Parliament in this coming Session. It's really quite crazy to think that we're working off an Act as ancient as this one is, despite all the amendments of recent years. And as I said, with the changes in technology on us now, we certainly cannot afford to allow this review to languish any longer.

Could I mention your training schemes, especially for the young and new amateurs, because it is recognized and it is very much appreciated, and I trust that this work will continue. I'm sure that we all wish the Institute well and trust it will go from strength to strength.

Once again, may I wish all involved the very best for this year's Contest, and in remembering the significance of this occasion it's with very great pride that I declare the 1983 REMEMBRANCE DAY CONTEST open. **AR**

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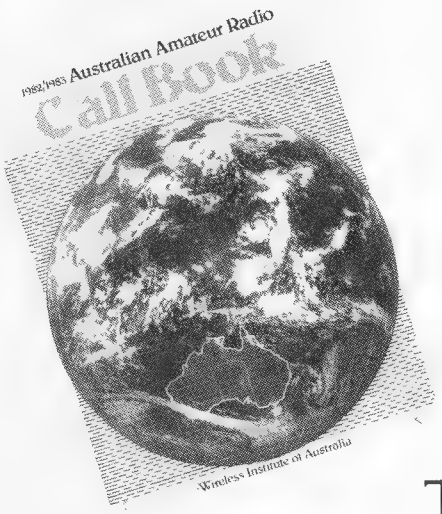

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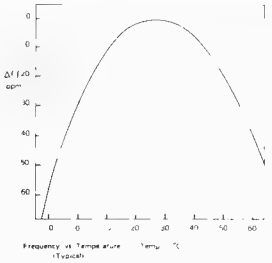

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2.	Frequency Tolerance	+30 ppm/28° +1°C
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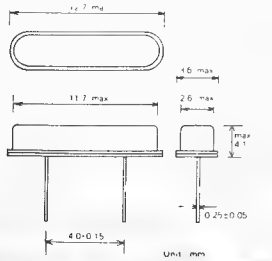
4	Series Resistance	31 0 kOhms max
5	Q Factor	40,000 min
6.	Parabolic Curvature Constant	Less than —0 04 ppm/°C (Refer Fig 1)
7.	Turnover Temperature	28 0°C +5°C
8.	Capacitance Ratio	700 max.
9.	Storage Temperature Range	—30°C +80°C
10	Operating Temperature Range	—10°C +60°C
11.	Aging rate	Less than +5 ppm/year
12.	Shock	Less than 5 ppm for 50 cm Hammer Shock Test
13.	Package Size	



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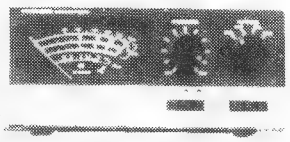

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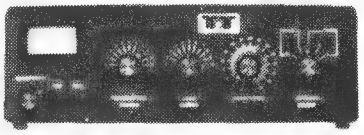

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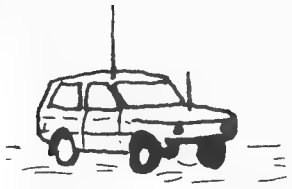


The Location of Aerials on Motor Vehicles

Geoff Atkinson VK3YFA
24 Weral Drive, Ringwood, Vic.

Purely on the grounds of maximum efficiency, the aerial on any mobile installation should be fitted on the highest part of the motor vehicle, provided certain fundamental electrical conditions are fulfilled. Nevertheless, this position is not always chosen for the following reasons:—

APPEARANCE

Undoubtely, an aerial located in the centre of a car roof detracts from the appearance of the car and, although a sloping aerial at the leading edge of the roof is often adopted, the general use of a roof aerial is becoming the exception rather than the rule.

SECRECY

An aerial mounted on the roof of a car is obvious as to its use and, with certain types of police cars, it is often necessary to disguise the car's use in some way, in order to achieve an element of surprise in an operation.

PRIVATE CAR USE

Where a radio installation is made in a private car, it is often not in the owner's interest to drill large holes in the roof and this alone often prevents the use of an aerial in this position.

GENERAL INSTALLATION PROBLEMS

The installation in a car roof is generally more difficult due to the requirement to feed the cable inside the head lining, past various struts, etc., and in a number of cars the head lining must often be loosened before this can be done.

Insofar as the technical considerations are concerned, the mounting of the aerial in the centre of the roof, giving a ground plane of at least ¼ λ in all directions, will provide a substantially omnidirectional pattern with a slight upward tilting of the "E" plane lobe. In general, this is an ideal pattern.

If the aerial is mounted on the leading edge of the roof, giving the desired ground plane in all directions except forward, the pattern will tend to be "lopsided" with optimum radiation towards the rearward direction. In other words, the best results will exist when the car is going away from the station.

Assuming that the roof of the car cannot be used for the aerial, then the next best position must be determined. Three basic parameters must be observed.

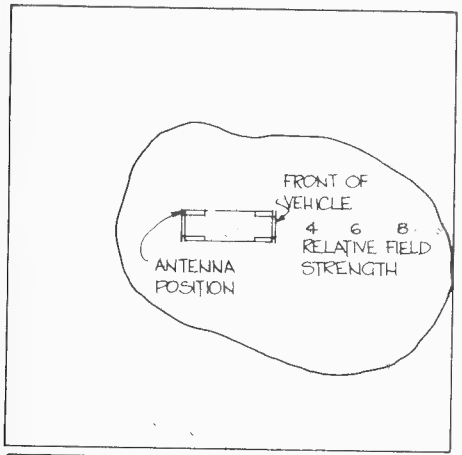
(a) The aerial must be mounted at a point on the car where a suitable pround plane exists, i.e. maximum amount of plane surface — > ¼ λ — beneath the aerial, extending in as many directions as possible.

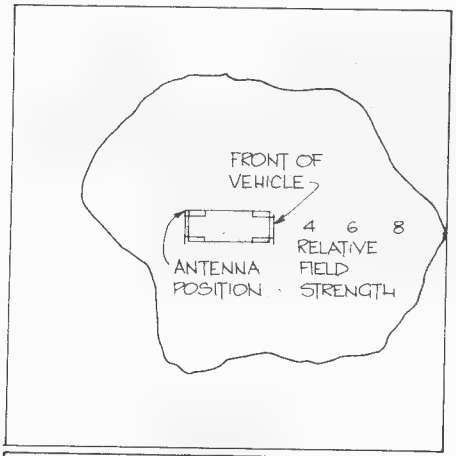
(b) The aerial must be at least ¼ λ away from vertical or semi-vertical metal pillars, etc., i.e. windscreen pillars, rear window pillars, door pillars, etc.

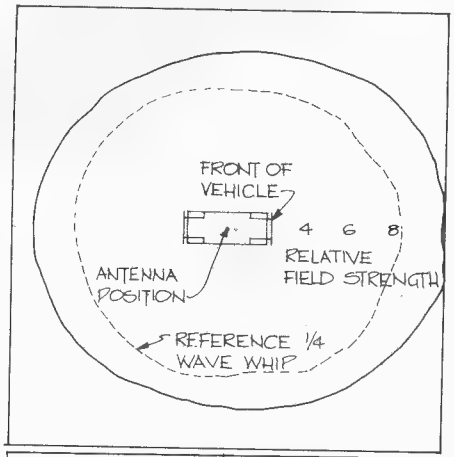
(c) The aerial must be as far from the car's ignition system as possible, particularly insofar as avoiding a ground plane which is in the immediate vicinity of the ignition system, or part of the general screening, i.e. bonnet cover.

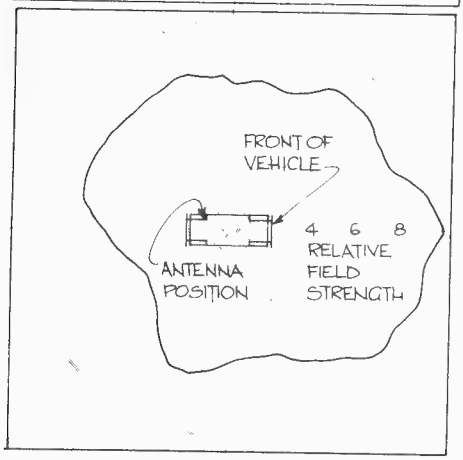
Various places other than the roof exist on a car where suitable results can be obtained, but all tend to show some basic disadvantage allied with (a), (b) or (c) above.

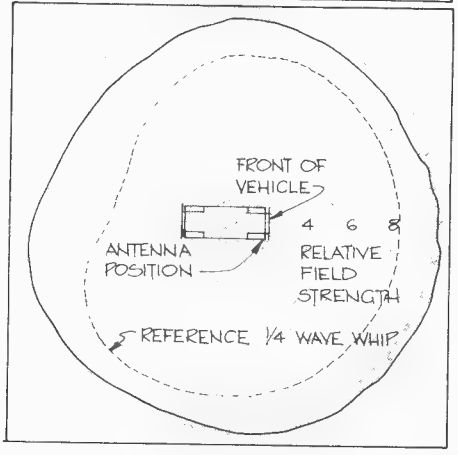
Fortunately, modern cars have sloping lines to the main section and therefore the effect given in (b) tends to be minimised.

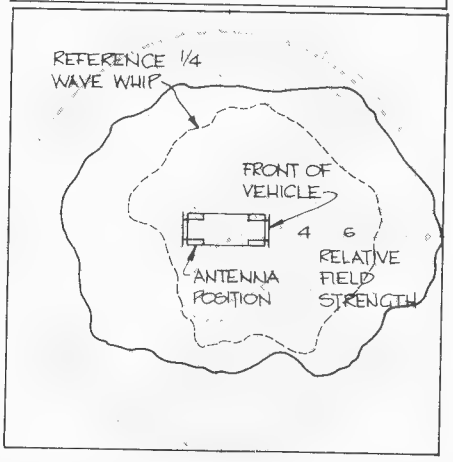












Additionally, ignition systems in present-day vehicles are in most cases suppressed to an approved standard so that (c) is not likely to prove a problem provided normal care is taken insofar as earthing, etc., is concerned.

The provision of an adequate ground plane in all directions is unlikely unless the aerial is mounted in the centre of the trunk lid. This is not an elegant solution and the side wings usually become the location to be considered.

Bearing in mind the ground plane restriction, some reduction in signal level (and range) can occur in the direction broadside to the car on the side the aerial is mounted. Additionally, any vertical pillar will also tend to affect the polar diagram with a result that undoubtedly there will be some range variations according to the position and travelling direction of the vehicle.

A further modification to the pattern will occur as the frequency changes. For instance, at VHF the main effect will be that caused by the ground plane restrictions, whilst at UHF the effect of vertical pillars, etc., will cause the greatest effect.

Assuming that the wing is chosen as the aerial position, the position relative to the rest of the bodywork, coupled with the general size and shape of the wing, must be considered.

Whether the rear or front wing is used will not materially affect the basic signal level, although the orientation of the pattern will change. However, ignition interference may be slightly higher when the aerial is mounted next to the engine and therefore, to minimise interference, the wings at the opposite end of the car should be chosen if possible. With a front mounted engine, the use of a rear wing does, of course, assist in the installation when a trunk unit is fitted, whilst the front wing simplifies the installation when a dash mounted unit is used.

In general, however, the aerial position tends to be a matter affecting the appearance of a car rather than any other reason. Undoubtedly the wing position simplifies installation and possibly does not detract from the resale value as would a roof mounting. On the other hand, the roof is obviously the best electrical position and, on cars specifically intended for, say, police work, this position should be chosen in all cases other than those needing a measure of secrecy. ■

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IS YOUR CALL SIGN SHOWN CORRECTLY ON YOUR AR ADDRESS LABEL

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Axioms

By Brian VK2AXI
in the "Propagator" May 1982

AMATEUR RADIO AND THE WAR

If anyone wants an interesting book to read, I would have to recommend "Most Secret War" by R. V. Jones (first published 1978 by Hamish Hamilton; my copy is the paperback Coronet edition, 1979). It is an account of British Scientific Intelligence between 1939 and 1945, with particular reference to radio-navigation systems, radar, and the V weapons. Some of the material in the book appeared in the TV series "The Secret War".

The book contains, in its 702 pages, two references to amateur radio, and both should be of particular interest to politicians and amateurs alike.

On the British side, Jones says "One day I was talking to a relative newcomer to Signals Intelligence, Flight-Lieutenant Rowley Scott-Farnie . . . an enthusiastic radio amateur, he had joined the RAF Signals Intelligence Service at the outbreak of war. Incidentally, our community of radio amateurs in Britain was to prove an invaluable reserve, both in Signals Intelligence and in Signals proper, as well as furnishing many of the staff for our rapidly increasing number of radar stations."

The other reference refers to the German side. On 28th February, 1942, a German radar station on the French coast at Bruneval was successfully raided, and much of the equipment, together with two German prisoners, was returned to England for investigation. Jones says: "The Bruneval booty was . . . obviously much better engineered than our own radar equipment, a fact which was readily admitted by our own radar men in their final report. We took some of it out to discuss it with the operator who had been taken prisoner, and who was very co-operative. We were disappointed that, despite his readiness to help, his technical competence was far lower than that of any of our own operators. The low technical ability of the operator and the high engineering standard of the equipment were not altogether dissociated. When I met General Martini, the head of German Air Signals and Radar, after the war, I told him that these two factors had surprised me, and he pointed out that he had a very low priority in demanding personnel and had to make do with those who were deemed unsuitable for other duties. He had no skilled reserve to draw upon among radio amateurs, as we had, because Hitler had banned amateur radio before the war since it might provide communication links for disaffected organizations. Martini had therefore to ensure that the equipment was so well made, and so easily replaceable if any part broke down, that the system could be operated by relatively unskilled personnel."

The February issue of "Zero Beat", the newsletter of the Youth Radio Scheme, contains an interesting passage from a footnote in "The Secret War", the book of the TV series:

Hermann Goering (commenting on Western technical superiority in March 1943): "The main blame belongs to Ohnesorge (Minister of Posts) — he never wanted to relax his grip on anything. We smashed up the amateur radio 'ham' clubs and wiped them out, and we made no effort to help these thousands of small inventors. And now we need them." **AR**

HOW TO KNOW YOU'RE GROWING OLDER

from "Gateway", Feb 1982

Everything hurts and what doesn't hurt, doesn't work.

The gleam in your eyes is from the sun hitting your bifocals.

You feel like the night before, and you haven't been anywhere.

Your little black book contains only names starting with "Fr."

You get winded playing chess.

Your children begin to look middle-aged.

You finally reach the top of the ladder, and find it leaning against the wrong wall.

You join a health club and don't go.

You begin to outlive enthusiasm.

You decide to procrastinate but never get around to it.

Your mind makes contracts your body can't meet.

You know all the answers, but nobody asks you the questions.

You look forward to a dull evening.

You walk with your head held high trying to get used to your bifocals.

Your favourite part of the newspaper is "25 years ago today."

You turn out the light for economic rather than romantic reasons.

You sit in a rocking chair and can't get it going.

Your knees buckle and your belt won't.

You regret all those mistakes resisting temptation.

You're 174 around the neck, 424 around the waist, and 101 around the golf course.

You stop looking forward to your next birthday.

After painting the town red, you have to take a L-O-N-G rest before applying a second coat.

Dialing long distance wears you out.

You're startled the first time you are addressed as "old timer."

You remember today, that yesterday was your wedding anniversary.

You just can't stand people who are intolerant.

The best part of the day is over when the alarm goes off.

You burn the midnight oil after 9.00 p.m.

Your back goes out more often that you do.

A fortune teller offers to read your face.

Your pacemaker makes the garage door go up and down when you watch a pretty girl go by.

The little grey haired lady you help across the street is your wife.

You get your exercise acting as a pallbearer for your friends who exercise.

There is too much room in the house and not enough in the medicine cabinet.

You sink your teeth in a steak and they stay there.

Courtesy of Ex G Club **AR**

SERVICE BULLETIN
or do your own repairs??

FT-ONE TRANSMIT MODIFICATION

The following information will allow you to change the transmission and receiving frequencies of the FT-ONE to conform with local requirements.

1. Remove the CONTROL Unit from the FT-ONE.
2. Referring to Fig. 1, note that connecting a jumper wire from Point A to either Point B or C sets the receiving frequency range, while connecting another jumper wire from Point D to Point E, F, G or H sets the transmission frequency range.
3. Solder the jumper wires to the appropriate points, selected from the Table below.

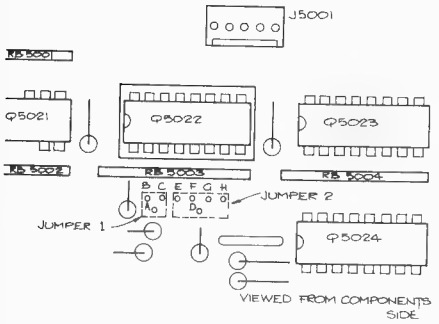


FIG. 1

RECEIVING FREQUENCY RANGE SETTING CHART

RANGE	Jumper Connection
150 kHz-27 MHz, 28 MHz-30 MHz	A-C
150 kHz-30 MHz	A-B

TRANSMITTING FREQUENCY RANGE SETTING CHART

RANGE	Jumper Connection
1.8-2 MHz, 3-4 MHz, 7-8 MHz, 10-11 MHz, 14-15 MHz, 18-19 MHz, 21-22 MHz, 24-25 MHz, 27-30 MHz	D-E
1.8-2 MHz, 3-4 MHz, 7-8 MHz, 10-11 MHz, 14-15 MHz, 18-19 MHz, 21-22 MHz, 24-25 MHz, 28-30 MHz	D-F
1.8-2 MHz, 3-4 MHz, 7-8 MHz, 14-15 MHz, 21-22 MHz, 27-30 MHz	D-G
1.8-2 MHz, 3-4 MHz, 7-8 MHz, 14-15 MHz, 21-22 MHz, 28-30 MHz	D-H
1.8-30 MHz	No connection

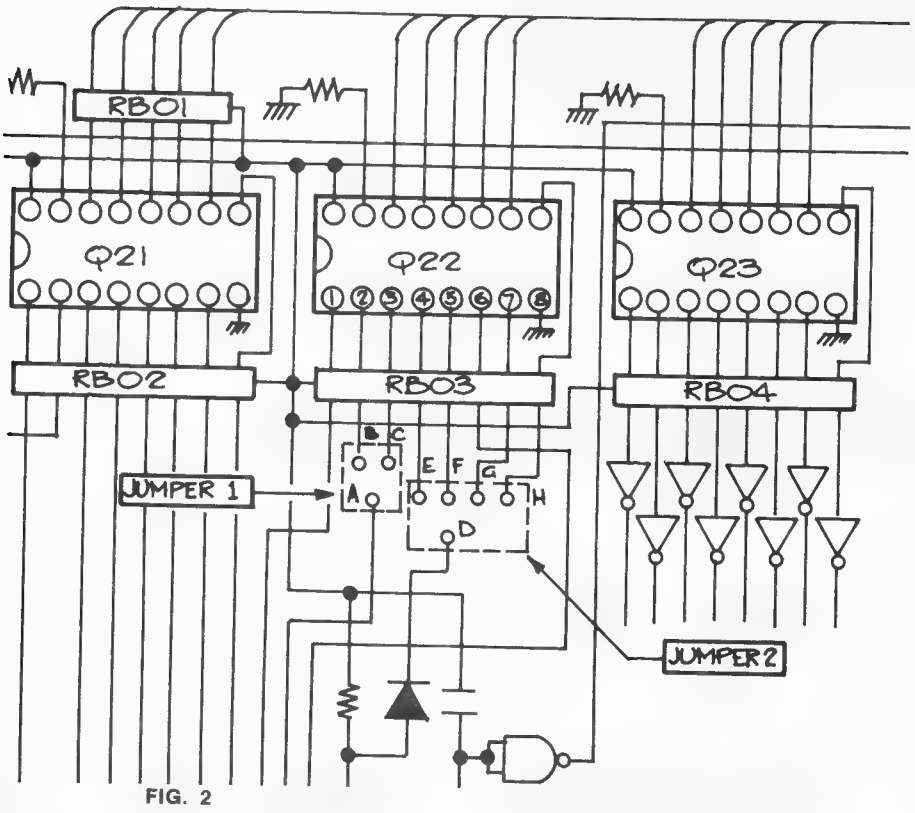


FIG. 2

Receive: general coverage (jumper 1: A-B)

Transmit: WARC (jumper 2: D-F)

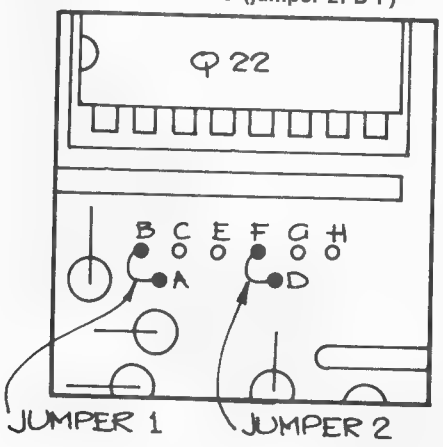
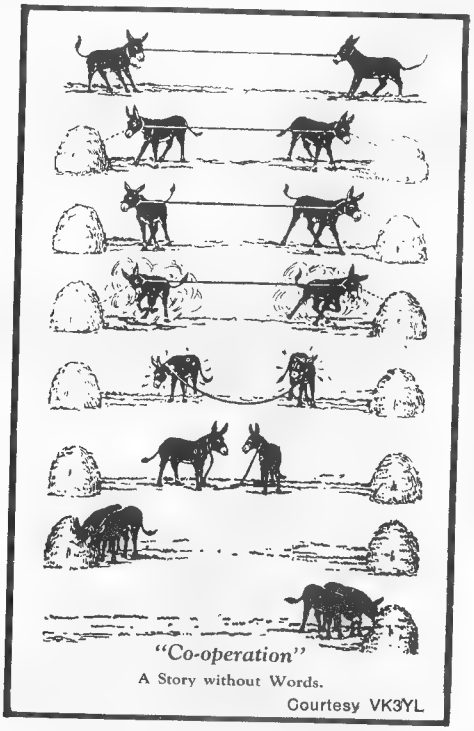


FIG. 3

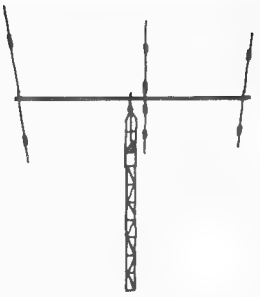
4. The example shown in Fig. 3 describes how to set the receiver coverage to 150 kHz through 29.999 MHz and the transmitter coverage to the new WARC bands.

The FT-ONE cannot legally be used as a marine transceiver on Australian registered ships. This modification to convert the FT-ONE to an FT-ONE-G (for general coverage), which includes the marine bands, is intended for use on foreign registered ships not operating in Australian waters or Government agencies.

This information has been kindly supplied by Dick Smith Electronics, Technical Bulletin No. 73.



COMMERCIAL KINKS



SERVICE AND MAINTENANCE OF TRAP BEAM ANTENNAS

By John Walker ZL3IB

This article reprinted from Break-In March 1982

Some time ago my Moseley TA 33 Jr tri-band developed high SWRs on 15 and 20m, but 10m operation was still adequate; I therefore wrote to the manufacturers for advice. The following article is based on their service notes and may be helpful to anyone with a multi-band beam.

Firstly, it is essential to understand how the traps work since they are critical for operation of this type of antenna. In each element they act as a high impedance at their resonant frequency; thus anything that downgrades their performance will upset the whole system. The Moseley traps comprise two coils wound on polystyrene formers enclosed in a wider 1⅛ in outer tube (Fig. 1). Electrically the inner and outer tubes form the two coaxial capacitors of the two parallel tuned circuits (Fig. 2).

DISMANTLING

Each trap assembly is different so it is a good idea to renew the original colour coding before you start. It may save a lot of headaches later.

(1) Remove each trap assembly and warm up to 60-100°C (borrow the XYL's hair-drier) to soften the plastic end-caps. When soft and pliable, slide them off the assembly; some soapy water can be used as a lubricant.

(2) You will now see two small screws holding a 20 SWG wire on to the outer tube. Unscrew these and pull out the coil assemblies.

(3) Clean the coils by brushing with a stiff brush (e.g. old tooth brush) but do not use water or solvents. Remove any corrosion. Check for any signs of arcing from the outer locking screws, through the plastic coil form, to the inner tubing.

(4) Clean the inside of the 1⅛ in. OD trap covers to remove any spider webs, etc. Spider webs allow moisture to accumulate and may allow arcing to occur.

(5) Reassemble by reversal of the above procedure. Originally the 20 SWG wire from the end coil was simply wrapped under the self-tapping screw that holds the outer tube in place but I found this to be badly corroded in my antenna. I therefore decided to solder this wire to a lug and mount with a serrated washer; I then sealed it with a dab of nail varnish.

(6) Finally replace the plastic end-caps; I sealed mine with RTV Silicone rubber cement. If the plastic caps are damaged, substitutes can be made by cutting a 12 mm (½ in.) hole in the ends of 28 mm plastic tube feet (as used on metal chairs, etc.

(7) When rejoining the aluminium tubing elements thoroughly clean off mating surfaces and coat with a light smear of graphite grease, or similar agent, to minimise corrosion.

Since carrying out the above overhaul my TA 33 Jr has performed like new. **AR**

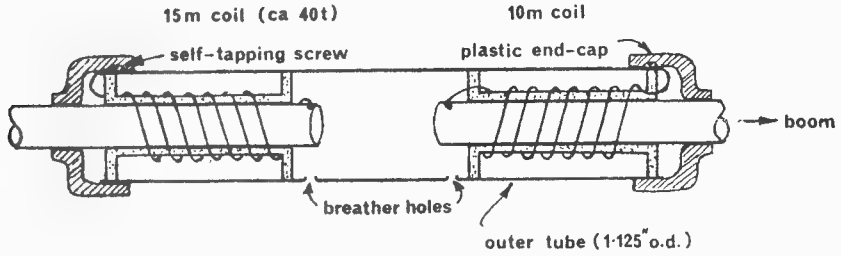


FIG. 1: Diagram of trap element

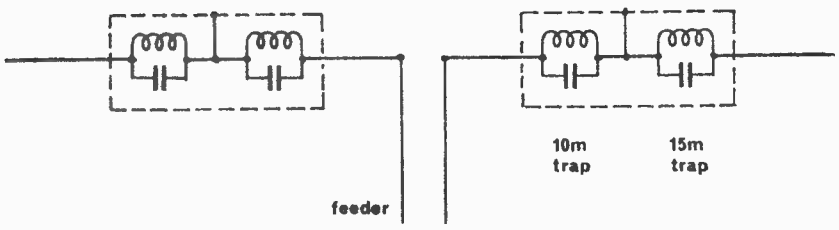


FIG. 2: Equivalent electrical circuit of driven element of three-band, trap beam.

DIAGNOSIS

Most problems are due to faulty coils and/or corrosion. Defective trap coils may be located by checking the SWR on all bands. High SWR at resonant frequency on all bands suggests a defective 10m coil; this is the coil with the fewest turns and nearest the boom. If only 15 and 20m operation is defective, then the fault probably lies in the 15m coil (this one has about 40 turns).

The Prez sez...

ARNS Bulletin October 1981

In the past few weeks I have had the opportunity to experienced emotions that I never really had experienced before. Oh, I was aware of their existence and observed others in the throes of these human exhultations, but I never really knew, personally, what the emotion felt like deep inside. I speak of willing service to others less fortunate, at the cost of personal sacrifice of your time and effort.

One of the elements of the Amateur Radio Operators' Code is "The amateur's knowledge and his station are always ready for the service of his country and his community".

THINK about that statement — for what it really means is that you will never share the real joy of amateur radio until you have experienced the emotion of truly serving others. What a perfect opportunity we have for this practice in our hobby of amateur radio.

If you take from amateur radio without giving of yourself, you will soon tire and drop from the ranks. You will become a listener. **AR**

TEST EQUIPMENT REVIEW

Ron Cook VK3AFW
TECHNICAL EDITOR

REVIEW OF THE AARON MODEL BS-635 35 MHz DUAL TRACE OSCILLOSCOPE

Every serious amateur needs a range of measuring instruments. Next to a multimeter and a frequency counter the most necessary instrument is a good HF oscilloscope.

Japanese instruments today compare very favourably with both locally-made and USA-made equipment. The Aaron oscilloscope range is no exception. The cathode ray oscilloscope (CRO) enables the operator to examine the dynamic operation of electronic equipment with an accuracy equal to the analogue multimeter. A good CRO will have a wide frequency range, a wide amplitude range, a large screen with a bright display and a sweep system capable of giving a stable display of complex signals. The BS-635 is a good CRO; it is suitable for radio and TV servicing, computer applications and electronic instrument testing.

The BS-635 is a modern dual trace general purpose oscilloscope with a 35 MHz vertical bandwidth. A sensitivity of 1 mV/division is available, by using a x5 gain switch, with a bandwidth of 10 MHz.

This oscilloscope is provided with a variety of features which, a few years ago, could only be obtained in an oscilloscope costing half as much as a new family sedan. AMONG THE FEATURES ARE *a bright, metal-back meshed CRT, delayed triggering, alternate triggering, single sweep, trigger hold-off, vertical and horizontal magnifiers and intensity modulation.*

CHARACTERISTICS

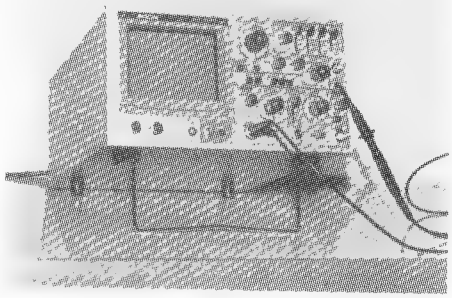
The BS-635 is of average size for a modern bench mounting CRO and is quite light (7.5 kg). This is good news for the mature readers who will remember the old hernia-makers of 15 years ago.

The reviewer believes that a front panel should not be made as small as technology might allow. Aaron Corporation have kept the front panel to about the right size. Indeed if it were much smaller the controls would need to be smaller and/or closer together, a change which could make them harder to use. The external finish is of high quality, although an inspection of the inside reveals some additional components soldered to the track side of several PCB's. Evidently the original design was not quite adequate in production. There is quite a lot of space inside the cabinet as only 3 PCB's are used.

As already indicated the controls are about the optimum size. The reviewer could not fault the location of the controls. All the switches had positive actions and the variable controls all operated smoothly. One nice feature was the discreet use of color to highlight particular functions. For example sweep times for TV frame or line examination, or to show when the frequency response was not 35 MHz.

Lights indicate when the trigger circuit has sufficient signal and when the sweep is ready for a "single shot".

The large 8 x 10 cm screen gives a bright sharp picture even at the fastest sweep



speeds. Only at the highest intensity levels did the trace thicken appreciably. Distortion is very low making this CRO a contender for use with computer generated displays.

The two vertical amplifiers offer the same excellent performance giving 5 μV to 10 V/cm deflection up to 35 MHz (-3 dB). For lower level signals below 10 MHz a x5 gain switch is available. Either amplifier A or B can be used alone or both together, or the combined signals A + B or A-B can be viewed. Amplifier B has an "invert" switch. A chopped display is given for 1ms/div. to 0.5 s/div when the alternate mode is selected.

Tests were made on DC on both amplifiers with a $\pm$ 2cm deflection. As received there was an average error of about -5%. After adjustment the accuracy was excellent over the whole range.

A series of tests at frequencies up to 120 MHz were made using an expensive American CRO as a reference. The BS-635 gave a display equal to the reference up to 50 MHz (neglecting the reduction in sensitivity) and an acceptable performance to 90 MHz on an AM modulated RF signal. The triggering was more stable on the BS-635! (A little practice was required to get correct operation but this is true of any triggering circuit.)

The vertical amplifier offers both DC and AC (10 Hz plus) coupling as well as an isolated ground for setting the trace.

The time base is excellent. Because of the large number of modes it is quite a bit more complex in operation than the A or B channels. The operator has a choice of sweep or X-Y is the Y channel and channel B is the X channel.

In the sweep mode the sweep time can be set between 0.1 μ to 0.4 s/cm; a x5 magnifier gives an effective 20μs/cm.

The trigger source can be internal, AC mains, or external. If it is internal it can be from amplified A or B or alternated between A and B.

The triggering is effective to beyond 50 MHz. Slope selection, HF or LF rejection, AC or DC coupling to the trigger source, TV synch, can all be selected.

The trigger level can be selected by the usual sort of variable control. An addition to the usual facilities is the "hold-off" which assists in viewing complex waveforms. The handbook does not adequately describe this function. Another useful feature is the adjustable trigger delay (0.1 μS-100 ms).

When the "INTENSIFIED" button is pressed the part of the waveform that appears during the delayed period is reduced in intensity. Thus part of the waveform of particular interest may be selected (see Fig. 1) starting up to 100 ms after the trigger switching from "INTEN'D" TO "DELAY'D" causes that part of the waveform previously at full brightness to be shown commencing at the left of the screen. Operating the x5 switch gives an expanded stable picture of the selected part of the waveform. Very handy for video and telemetry testing.

HANDBOOK

The handbook shows occasional minor lapses into Japanese-English but it really has only one main shortcoming. There is only a scanty section on maintenance. Although a circuit diagram is given, detailed waveform shapes, voltages etc. are not given. The treatment of operating instructions and applications plus calibration adjustments is reasonable (see earlier comment on hold off).

SPECIFICATIONS

CRT

6" (150mm) Flat-faced Metal-back Post-Deflection-Accelerator with Internal Graticule

Effective Display Area: 8 x 10div (1div = 10mm)
Acceleration potential: 6kV

VERTICAL

Operating Modes: CH-A, CH-B, DUAL, ADD and SUB (CH-B can be inverted.) — DUAL Modes: ALTER: 0.1μs ~ 0.5ms/div; CHOP: 1ms ~ 0.5s/div — CHOP Frequency 200kHz approx.

Deflection factor: 5mV/div ~ 5V/div; 1mV/div ~ 1V/div (5X GAIN); 10 ranges in 1-2-5 step with fine control

Bandwidth: NORM; DC; DC ~ 35MHz(—3dB). AC; 10Hz ~ 35MHz(—3dB) — 5X GAIN: DC; DC ~ 10MHz(—3dB). AC; 10Hz ~ 10MHz(—3dB)

Rise Time: Less than 10ns (Less than 35ns with 5X GAIN.)

Overshoot: Less than 3%
Input Impedance: 1MΩ $\pm$ 5%, 20pF $\pm$ 3pF

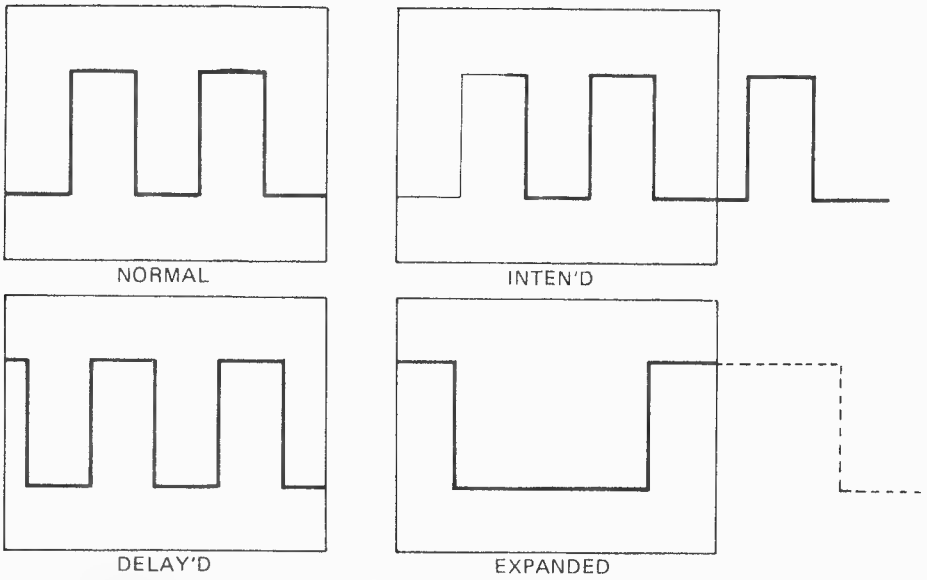


Fig 1: Operation of Intensified, Delayed and Expanded functions for viewing a complex wave.

Maximum Input Voltage: 600Vp-p or 300V (DC + AC peak)
Channel Isolation: Better than 60dB at 1kHz

HORIZONTAL

Sweep Modes: NORMAL, AUTO and SINGLE
Time Base: 0.1μs ~ 0.5s/div (Accuracy within ±3%); 21 ranges in 1-2-5 step with fine control
Sweep Magnifier: 5 times (5X MAG) (± 10%)
Linearity: 3% — Delayed Trigger: INTEN'D; Delay time become dim. DELAY'D; Sweep starts at time delayed. Delayed Time: 100msec ~ *1 μsec in 5 steps with variable. Jitter: 1/5000*

TRIGGERING

Sensitivity: INT: More than 0.3div for DC ~ 7MHz; More than 1div for DC ~ 35MHz (triggerable up to 50MHz); More than 1.5div for DC ~ 10MHz (vertical PULL 5X GAIN) — EXT: More than 50mVp-p for DC ~ 7MHz; More than 0.2Vp-p for DC ~ 35MHz (triggerable up to 50MHz)
Source: INT(CH-A, CH-B, ALT), LINE, EXT, 1/10 EXT, TV(LINE, FRAME)
Slope: Positive and Negative, continuously variable with level control, PULL AUTO for free-run
Coupling: AC, HF-REJ, LF-REJ, and DC(HF/LF REJ at 30kHz) — TV SYNC Vertical and Horizontal Sync Separator Circuitry allows any portion of complex TV video waveform to be synchronized and expanded for viewing TV-H(Line) and TV-V(Frame) are switched automatically by SWEEP TIME/DIV switch — TV-V: 0.5s/div to 0.1ms/div — TV-H: 50μs/div to 0.1μs/div

X-Y OPERATION

CH-A: Y axis; CH-B: X axis; Highest sensitivity: 1mV/div

OTHER SPECIFICATIONS

Intensity Modulation: TTL Level(3Vp-p); Positive . . . brighter; Bandwidth: DC ~ 1MHz; Maximum Input Voltage: 50V(DC + AC peak)
Calibration Voltage: 0.5Vp-p ± 5%, 1KHz ± 5% Square wave
Trace Rotation: Electrically adjustable on the front panel
Power Requirements: AC: 100, 120, 220, 240V ± 10%; 50/60Hz; 30W approx.
Weight: 7.5kg approx.
Size: 162(H) x 294 (W) x 352(D) mm

CONCLUSION

Overall it is a high performance professional HF oscilloscope with very good sensitivity and excellent triggering facilities. Although it is suitable for research and test laboratories the price places it within the reach of the serious amateur/constructor. After all many HF rigs cost a lot more than the price of $790.

Further details are available from Elmeasco Instruments Pty Ltd, who very kindly made this instrument available for evaluation.

ELMEASCO INSTRUMENTS PTY LTD

NSW: P.O. Box 30, Concord, 2137. 13-15 McDonald St, Mortlake. (02) 736 2888.
Victoria: P.O. Box 107, Mt Waverley, 3149. 21-23 Anthony Drive, Mt Waverley. (03) 233 4044.
Adelaide: (08) 271 1839.
Brisbane: (07) 229 3161.
Perth: (09) 398 3362.

ASSESSMENT SUMMARY OF AARON MODEL BS-635 OSCILLOSCOPE

CATEGORY	RATING	COMMENTS
APPEARANCE		
Packaging	★★★	*Foam inserts in a sturdy carton*
Size	★★★★	*Suitable for laboratory bench operation*
Weight	★★★★	*Light enough to carry easily*
External finish	★★★★★	*Attractive and of good quality*
Construction	★★★	*Some extra components soldered to PCB tracks*
FRONT PANEL		
Control positioning	★★★★★	*Logical and convenient*
Control size	★★★★★	*Easy to grasp and adjust*
Scale and control markings	★★★★★	*Unambiguous. Nice use of discrete colors*
Indicators	★★★	*Sweep ready and triggered lamps. No beam finder*
SCREEN		
Intensity	★★★★	*Bright at all sweep speeds. Probably not burn-proof*
Focus	★★★★	*Sharp over whole screen. Blurs only at extreme intensity*
Linearity	★★★★	*Barely detectable distortion*
Graticule	★★★★	*8 x 10cm. No illumination*
VERTICAL AMPLIFIERS		
Amplitude range	★★★★	*Covers most requirements*
Frequency response	★★★★	*Usable well beyond 35MHz*
Attenuator accuracy	★★★★	*Very accurate on DC*
Combined functions	★★★★	*A and/or B, A+B, A—B, chopped and alternate*
TIMEBASE		
Sweep modes	★★★★★	*Wide range, incl. delayed*
Speed range	★★★★	*21 ranges 0.5s/cm to 30ns/cm with magnifier*
Triggering	★★★★★	*Equal to best brands*
Linearity	★★★★	*Better than 3%*
OTHER FEATURES		
X-Y operation, Z modulation	★★★★	*Features found in top range instruments.*
Handboook	★★	*No detailed maintenance details. Does not explain Holdoff function*

RATING KEY ★ **Poor** ★★ **Satisfactory** ★★★ **Good** ★★★★ **Very good** ★★★★★ **Excellent**

EQUIPMENT REVIEW

Ron Fisher VK3OM
3 Fairview Avenue, Glen Waverley 3150

EQUIPMENT REVIEW
The YAESU FT-230R 2 METRE FM TRANSCEIVER

VHF transceivers have advanced to a remarkable extent over the last few years. The new YAESU FT-230R for instance has 25 watts output, full coverage of the whole two metre band in either five or ten kilohertz steps, plus a microprocessor control system that can do all sorts of remarkable things.

However I always like to go back to the beginning and trace the evolution of the various pieces of equipment that are reviewed. Back in 1971 when most two metre operators were using converted tube type car phones such as the MR-6 or MTR-13, Yaesu introduced the FT-2F. It was around a sixth of the size, weighed only a quarter of the old rigs and had the capability of switching twelve channels (who would ever need 12 channels!). Well that started it, those little transceivers were just irresistible. We all had to have one, and so the two metre boom began. Twelve channels soon gave way to twenty two or more and the cost of crystals could equal the cost of the transceiver. Synthesized transceivers appeared around 1976, the YAESU 200R had 200 channels between 146 and 148MHz. For some reason it met with only limited success, while the multi mode tunable transceivers really took on. The 800 channel FT-227 was probably the most popular YAESU two metre transceiver with the latter RA and RB models incorporating up/down scanning from the microphone. The new FT-230R could perhaps be considered an updated replacement for the 227. While the 227 was about the same overall size as the original FT-2F, the 230R is actually about half the volume of the 227. For good measure throw in twice the power output, ten memories, two VFOs, priority channel checking and full band scanning just to name a few of the features and you can begin to see just what this little rig has to offer. However enough of comparisons, let's look at the FT-203R in detail.

The FT 230 R with the scanning Microphone — note the clear LCD Frequency Readout.

THE FT-230R DESIGN FEATURES.

Before we go on to look at the circuit details of the 230, let's see just what it has to offer. As mentioned above, it is extremely compact. The actual dimensions are 150mm wide, 50mm high and 174mm deep. It should fit somewhere even in the most diminutive compact car. The weight is only 1.3kg. The transceiver is supplied with a mobile mounting bracket and a chrome tilt bale for home use. Also supplied is a microphone with scanning buttons and a function lock switch. Perhaps the most appealing feature is the superb LCD frequency readout. It is both large and very readable even at an angle. Of course it is readable with direct sun light in direct contrast to LED displays that disappear under these conditions. At night the background is evenly and brightly illuminated.

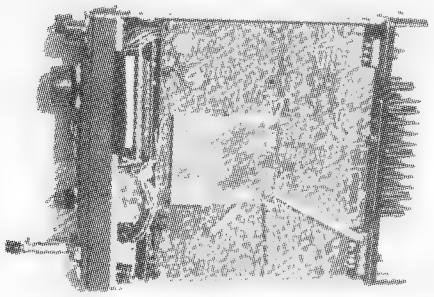
The S/output meter is also brightly illuminated through the rear of the translucent scale. The frequency has five digits and is capable of reading to 100Hz, however as the synthesizer steps in either five or ten kHz steps, the last digit seems rather unnecessary. Probably the reason for its inclusion is that it appears that the whole control system has been taken from the popular FT-290R where of course the last digit is used in the SSB tuning mode. The 230 memory and scanning system is also closely related to the 290R. Ten memories can be programmed and then recalled either by the memory switch or by scanning. When the scanning method is selected, it will pause for five seconds when a busy channel is located, just long enough to decide if you want to hear more or not. If you do it only requires the push of either of the scan or PTT buttons on the microphone to halt the scanning. If you happen to be looking for a clear rather than a busy channel when scanning then a rear panel selector switch will give you this facility.

Any one of the memories can be programmed as a priority channel. If you are expecting a call from a friend on your private frequency, but you would like to listen to the chit chat on the local repeater then it is only necessary to tune the repeater on the main tuning, switch the memory selector to your private frequency, push the F button then the MR/PRI button and the priority channel will be quickly sampled every five seconds. If your friend calls the transceiver will lock onto the priority channel. With the priority checking going on, the first decimal point of the display will blink to indicate this mode of operation. The second decimal

point blinks when a halt occurs during either memory or full band scan operation. It should be noted that once the memories have been selected, they will be held even if the supply voltage is removed from the transceiver. This is due to the inclusion of a lithium cell which YAESU claim has a five year life. Current drain of the memory is rated at only one microamp.

Two separate VFOs are included, the second one being useful if split operation other than 600kHz is required. It can also provide an additional memory quickly selected with the VFO push button.

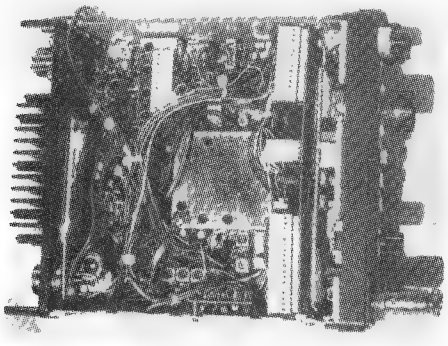
Tuning up and down the band can be done in two ways. The tuning knob has a soft stepping movement, much improved over the old "hack saw" feel of the old FT-227. Tuning as mentioned before is in either 5 or 10kHz steps and I found that the 10kHz steps were the ones most used. Up/Down tuning can be initiated automatically with the microphone scan buttons. A quick jab of one of the buttons will produce a single step while holding the button for two seconds will give a continuous tuning scan that will stop either on signals or clear channels depending on the setting of the rear mounted BUSY-MAN-CLEAR switch.



Inside view of the 230.

THE FT-230R CIRCUIT DESCRIPTION

The receiver is a double conversion set up of fairly conventional design. 10.7MHz and 455kHz are used with a 15kHz bandwidth filter at the first IF and a 15 kHz ceramic filter at the second IF freqency. Quite a bit of effort has been expended to produce a clean signal free from cross modulation. As we shall later see this has been quite successful. Relay antenna switching feeds a lowpass filter to a 3SK51-03 RF amplifier. A five section band pass filter which has a steep cut off just outside the band edge keeps unwanted out of band signals well in the background. Audio output of one watt is produced by an IC amplifier driven by a single transistor stage.



Underside view.

The transmitter line up starts at 10.7MHz and is heterodyned to the final transmit frequency via a balanced FET mixer stage. Audio from the microphone is amplified and limited by an IC stage before the 10.7MHz modulator stage. Two driver stages precede the final 25 watt power out-put stage. ALC is produced from a portion of the transmitter out-put and fed back to a control stage between the transmitter mixer and the first driver.

Of course the heart of a transceiver of this type is the PLL section which provides the frequency control and selection. The operation of this section is of course quite complex and would require a rather lengthy description. If you are lucky enough to acquire an FT-230R, I would suggest you read the PLL circuit description in the instruction book.

The PLL is controlled by a low current drain (1 microamp) 4-bit micro processor. The ROM has been preprogrammed to do all the ingenious things mentioned earlier.

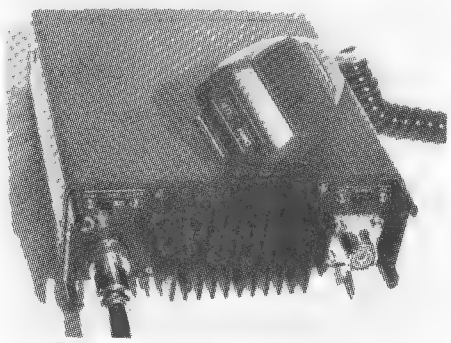
THE FT-230R ON THE AIR

We have already covered many of the operational points in the earlier description section. The first thing I discovered when I tried to put the transceiver on the air is that a solid power supply is needed. My five amp supply ran out of steam and I had to resort to a borrowed 10 amp supply. YAESU rate the current drain at 5 amps with 25 watts output but the test unit required 6 amps and delivered 28 watts out-put. If you are going to use the 230 mobile then of course the current drain will not worry you but you might need to watch your connection to the battery. A cigarette lighter plug connection may not be up to the task of supplying the required current.

As received the memory backup battery is switched off. Removal of a small rubber plug from the bottom of the transceiver case gives access to the switch.

The next thing I discovered is that when used as a home station transceiver with the tilt bale installed, the rear of the transceiver rests on the rather sharp ends of the heat sink. If you have a wooden or vinyl topped desk, watch out — they scratch. A couple of self stick rubber pads would fix the problem. Perhaps YAESU might include these in future. With the power supply problem sorted out, the FT-230R performed in a faultless way. Power out-put was 28 watts at 13.8 volts. I then checked out-put at lower voltages to simulate mobile or portable operation with the battery not on charge. At 12.5 volts output was 22 watts and at 11.5 volts out-put was down to 15 watts. Current drain at the lower voltages dropped to 5.4 amps.

Received audio quality was excellent and at no time was an external speaker considered necessary. Audio output was adequate and should be sufficient even in a fairly noisy car. Transmit audio was also good, but reports indicated that the quality became a little harsh when talking close to the microphone. With the mic about 5 to 7cm back, quality was fine. The microphone is well shaped and the scan buttons are easy to handle. With the transceiver used under mobile conditions, the best way to operate is to use the memories and scan from channel to channel either by stepping position to position or by just letting the transceiver find the channel you need.



Rear view shows connectors and adequate heat-sink of the 25-watt final.

The only point of criticism with the receive performance is the limiter action. While testing the transceiver one windy night, I noticed a good deal of intermittent noise on a weak signal. Switching to my normal transceiver, the noise was totally absent. Checking on an HF general coverage receiver identified the noise as a rather harsh power line noise obviously brought on by the windy weather.

I was not able to do any actual checks on sensitivity or quieting as a suitable signal generator was not available at the time. However sensitivity was comparable to other current model FM gear that I use in the shack.

SPECIFICATIONS

Frequency Coverage:	144.00—147.99 MHz
Synthesizer steps:	5/10 or 12.5/25 kHz
Power Output:	25 watts
Modulation Type:	Variable Reactance
Deviation: (max.):	± 5 kHz
Maximum Bandwidth:	16 kHz
Spurious Emissions:	—60 dB or better
Antenna Connector:	SO-239
Output Impedance:	50 ohms
Microphone Impedance	500-600 ohms
Receiver Type:	Double Conversion Superheterodyne
First IF:	10.7 MHz
Second IF:	455 kHz
Sensitivity:	0.25 μV for 12 dB SINAD
Selectivity:	± 6 kHz (—60 dB) ± 12 kHz (—60 dB)
Audio Output:	1.0 watts@ 8 ohms
Audio Ouput Impedance:	8 ohms
Power Requirements:	13.6 VDC (negative ground)
Current Consumption:	(approx) TX 5.0A, RX 0.3A (standby)
Case Size:	150(W) x 50(H) x 174(D) mm
Weight:	approx. 1.3 kg.

Options

YM-49	Speaker/Microphone
FTS-32	CTCSS Encoder/Decoder
FTS-32E	CTCSS Encoder

THE FT-230R INSTRUCTION BOOK

If you are used to the normal style of Yaesu instruction books, you will be surprised with this one. It is small, measuring only 15 by 21cm. However what it lacks in size, it more than makes up for in quality. Its 52 pages include specifications, front panel controls and switches, rear apron switches and jacks, installation, operation, circuit description, maintenance and alignment and a full parts list. The book is well illustrated with the major components labelled. Provided one has the required test equipment, checking of the alignment would be a straight forward procedure.

Operation of the FT-230R is covered in a complete and precise manner with no sign of Japanese English.

CONCLUSION

The FT-230R is a delightful little transceiver. The 25 watt output capability is a worthwhile increase over the more usual 10/12 watt transceiver. While doubling the power makes only a small difference in the received signal at the other end, it could make the difference of just getting into or not into a repeater. The FT-230R is highly recommended. Our test unit was supplied by Bail Electronic Services, 38 Faithful Street, Wangaratta, Victoria 3677. All enquiries regarding price and delivery should be addressed to them.

AR

EVALUATION AND ON AIR TEST OF THE YAESU FT-230R

Serial No. 2G 050776

CATEGORY	RATING	COMMENTS
APPEARANCE		
Packaging	****	Plastic wrapped. Foam inserts in strong carton.
Size	*****	The most compact 2m FM mobile transceiver yet seen.
Weight	*****	Only 1.3kg.
External finish	***	Good with exception of sharp edge at rear of heat sink.
Construction quality	****	Very good quality components and fittings.
FRONT PANEL		
Location of controls	****	Considering size of panel all controls well spaced.
Size of knobs	****	Although small, knobs are easy to use.
Labelling	***	Scan position of memory control hard to find.
Meter	***	Brightly illuminated. Easy to read.
VFO knob action	***	Click stop type action. Smooth action.
Dial readout	*****	Excellent under all conditions of external lighting.
Digital	NA	
Analogue	***	Transmit and receive signal indicators.
Status indicators		
REAR PANEL	***	All connectors easy to get to.
RECEIVER OPERATION		
VFO stability	****	Drift did not exceed 250Hz.
Memories	*****	Ten memories. Switch or scan selected.
Sensitivity	****	Compared well with other top line equipment.
Noise rejection	**	Local electrical noise not rejected as well as other receivers.
Squelch action	***	Smooth action.
'S' meter	***	Realistic readings.
Signal handling	****	Handled adjacent channel signals very well.
Spurious responses	*****	None heard.
QUALITY OF RECEIVED AUDIO		
Internal speaker	***	Clear, undistorted audio.
External speaker	NA	Not available. Provision to connect external speaker if required.
Headphone output	NA	No provision for headphones.
TRANSMIT OPERATION		
FM output	*****	Excellent for size of unit. (28 watts at 13.8V).
Audio response	***	Good quality reports received.
Metering	***	Relative output. Adequate for FM operation.
Relay noise	****	Very quiet operation.
Cooling	****	Heat sink did not get too hot even with lengthy transmissions.

TRY THIS

VERSATILE SCHMITT TRIGGER

Compiled by: Ron Cook VK3AFW

7 Dallas Avenue, Oakleigh 3166

How many readers know that the 555 IC can be used for applications other than as an oscillator or a monostable flip-flop? One extra application is as a Schmitt trigger, which is a device that switches its output from high to low at different input levels. This is illustrated in Fig. 1. An ordinary squaring circuit switches from high to low at the same voltage as it switches from low to high.

A Schmitt trigger introduces hystersis. For the circuit in Fig. 2 if Vcc = 10.0V then increasing the voltage on pins 2, 6 up to 6.6 volts has no effect on the output which sits at 10.0V. Increasing the input to 6.7 volts causes the output to fall to 0 V. Further increases to 10V have no effect. Reducing the input has no effect until it falls to 3.3 V whereupon the output rises very rapidly to 10.0V. For the AC coupled circuit in Fig. 2 signals less than 3.3V peak-to-peak will not switch the output. Signals greater than 3.3V peak-to-peak will give a square wave output of the same frequency. Values for R1, R2 might be 10KΩ and C1 180 nF for audio frequency signals.

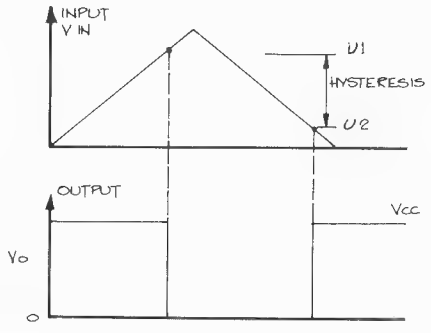


Fig. 1: Operation of Schmitt Trigger.

APPLICATIONS?

It can be used to square up signals of arbitrary shape with significant noise yet not be responsive to the noise. In RTTY systems it could follow the frequency discriminator and give additional noise reduction and signal level translation. For computer systems where problems are experienced with noise on tape recordings a Schmitt trigger can eliminate the noise. **AR**

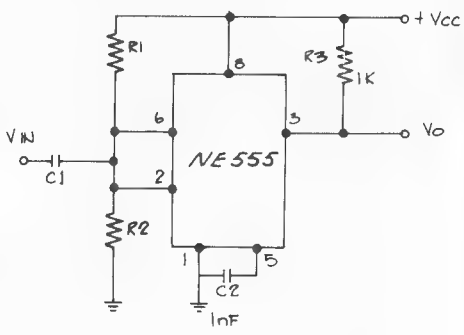


Fig. 2: Circuit of Schmitt Trigger
U1 = ⅔ Vcc.
U2 = ⅓ Vcc.

NOVICE NOTES

Compiled by Ron Cook, VK3AFW.
7 Dallas Avenue, Oakleigh, 3166.

CHOOSING A FILTER CAPACITOR.

The Novice can save a useful amount of money as well as having some old fashioned fun by building his own power supply. Once the capabilities of a DC supply exceed those for a CB rig the cost rises faster than a space shuttle. This article discusses one of the mysteries of power supply design, choosing the filter capacitor.

It is assumed that the novice is intending to build a supply similar to that shown in Fig 1. Firstly some comments and general discussion about the circuit to refresh a few memories.

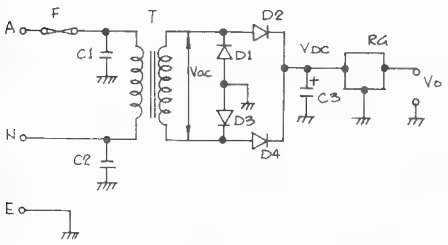


Fig 1: Circuit of a simple power supply. (Refer to text for component values).

The fuse F is placed in the active line and is chosen so that it will blow if a fault occurs. It must not blow due to normal switch-on transients or normal load currents. A 1A rating should be an appropriate size for a 5A DC load from a transformer with an 18V RMS secondary. Many pieces of equipment do not appreciate spikes caused by, say, motors starting (your refrigerator perhaps?) or your neighbour's welder, to name two examples.

Two small capacitors across the line to ground will help reduce line-born hash and transients. Note that you MUST have a proper mains earth properly connected or the chassis will rise to 120V AC and give you a nasty surprise. C1 and C2 are the interference bypasses. A value of 1nF is suggested: too large a value will represent a hazard and might draw too much mains current. The voltage rating should be 600V DC.

The choice of transformers is more limited. We must choose one suitable for use with a capacitive input filter and with a secondary current rating greater than the DC load current. The AC secondary voltage is determined as follows. Add the DC output voltage to the minimum drop across the regulator and add the drop across the diodes on full load and also the peak-to-peak ripple across C3. Multiply the result by 0.71. For a supply giving 13.8V out a secondary voltage of 18V is common. The ripple across C3, v, is chosen by the designer and is in the range 1 to 5 volts for this type of supply.

The diodes, D1 to D4, form a bridge rectifier and can be bought assembled in that configuration. They have a hard job, as we shall see, so be generous and choose ones with a current rating in excess of the DC load.

The regulator may be a single IC or, for higher currents, a composite unit such as Denzil Roden's "Even Simpler Regulator".

Now let us turn to C3. How does it operate? The diodes rectify the AC signal to give the half-sine waveform shown in Fig 2. If there is no load C3 will charge up to the peak voltage. For very tiny (microamp) loads the DC voltage is equal to the peak AC voltage which is 1.414 times the transformer's RMS voltage. For such small currents the diode volt drop is negligible. As soon as an appreciable load (1A say) is connected a different waveform occurs. The load draws energy all the time and the capacitor is the source of energy. C3 is charged to the peak voltage (or very near if the diodes are not near their rating) by the conducting diodes. This occurs each half cycle and the diodes conduct in alternate half cycles, D1, D4 then D2, D3. The conduction time, t2, is quite short as the diodes only conduct when the capacitor voltage is less than the instantaneous rectified transformer voltage. When the diodes are not conducting C3 sustains the load current. This may be 90% of the time! In Fig 2 the voltage drop across the rectifier has been neglected although in practice it may reach 2V.

The operation is the same of course with the capacitor receiving a large pulse of charge when the rectifier output exceeds the voltage across C3. C3 then discharges until the next half-cycle when the rectifier output again is sufficient to charge C3 again. The action of the capacitor is analogous to that of a flywheel on an engine receiving energy in pulses and then smoothly giving up a portion of its total to the load. The capacitor "fills in" the valleys in the rectifier waveform and gives a smoother or filtered output.

The capacitor filter system is hard on the diodes because they are only given a short time to supply the energy. The average diode current is the same as the load current but the peak current may be 10 times the DC load current. Thus the repetitive surge rating of the diodes needs to be greater than this factor to give some safety margin. The voltage rating is not so onerous — twice the peak voltage plus a margin. 100V would be fine for an 18V transformer. Modern diodes have been designed to cope with such harsh service so for a 5A DC supply diodes rated at 6 to 10A should be satisfactory. We digress.

Earlier mention was made of the ripple voltage v. This is shown in Fig 2. It is the voltage that C3 loses in its effort to keep the load current flowing. If v is made large the current rating of the diodes may be relaxed but

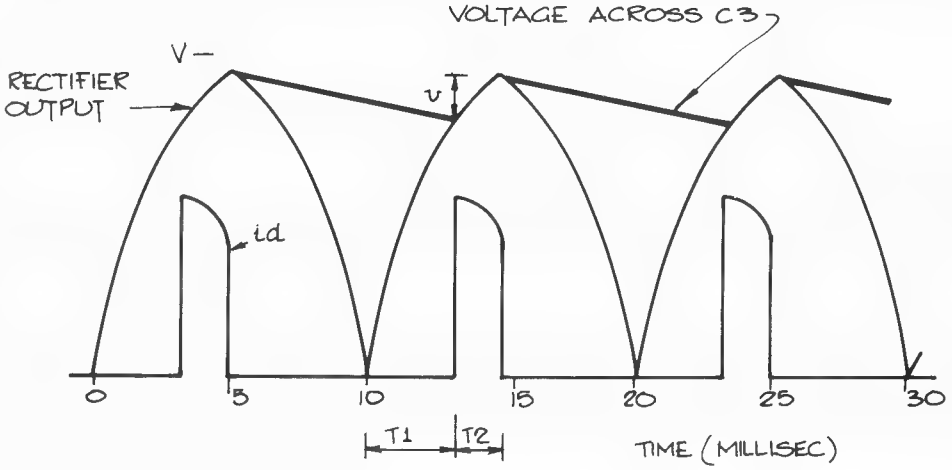


Fig 2: Power Supply Waveforms.
The rectified voltage output, without filtering, consists of a series of half-sine waves. C3 charges to the peak voltage, V, during time interval t2. It then discharges (5+t1) milliseconds losing v volts. Diodes D1, D4 and D2, D3 alternately carry the current pulse id to charge C3.

the transformer may need a higher secondary voltage and the regulator has to work harder to keep the ripple out of the output. Ah yes, life wasn't meant to be easy. If C3 is made smaller then v will increase if the load is the same. A larger C3 makes the ripple voltage less, but remember the poor diodes.

If we examine the waveforms it is possible to derive an exact formula for the size of C3. We also can obtain a simple formula that overestimates the value by 10 to 20%. Because of the manufacturing tolerance on electrolytic capacitors (-0, +50% is typical) and the consequent limited range of values, great accuracy in calculation does not seem warranted.

Fig 2 shows us that in each half cycle C3 is discharging for the whole period except for time t2. Now t2 is 20% or less of the half cycle period so we will assume, for simplicity, that C3 discharges in a half-cycle period (10mS) and is instantaneously recharged. If we let the load current be I amps then we can use two simple formulae.

$Q = It$ .....(1)
$Q = CV$ .....(2)

The charge given up by C3 is calculated from (1), Q = Ix10mS, Q being in coulomb. From (2) we have the value of C3 as C Farad and the change in voltage V is v our peak-to-peak ripple voltage.

Thus our formula is

$C = I/(100v)$

So if I is 5 amps and assuming for the moment that $v = 4.6V$ then

$C = 5/(100x4.6)$
$= 0.0109$ Farad

So a value of 10,000 μF would be an appropriate choice for C3. We are left only with the problem of the value of v.

If we see that a transformer of suitable current rating with an output voltage of 18V RMS is available then knowing that this has been used before for 13.8V supplies we might as well start with that and make another choice if we find from our sums that it is unsuitable.

We calculate the peak transformer output.

$V = 1.41x18 = 25.4V$

If our mains voltage sometimes dips by 10% then we should take 90% of the above figure, 22.9V. The rectifier drop should be accounted for. Let us assume it is 2V.

Thus the peak voltage on C3 is taken to be $22.9-2 = 20.9V$.

The minimum voltage to which C3 can fall is the sum of the output voltage and the minimum regulator drop. Assuming the latter to be 2.5V the minimum voltage on C3 is $13.8 + 2.5 = 16.3V$. Thus $v = 20.9-16.3 = 4.6V$. By a strange coincidence this is the voltage we used in our calculation for C3. Of course you would calculate v first and then C using the formulae given.

The voltage rating of C3 must be greater than 25.4V. A 30V rating would be the minimum and 35 would be quite adequate. Higher voltages would not be necessary.

The capacitor has to carry quite a heavy AC current and because of the fast turn-on times of the diodes a low inductance is desirable. Some diodes cause switching transient audible into the VHF region so the speed at which they switch can be imagined. In computer supplies where 5V at many amps is a common requirement special capacitors with high ripple current capacity and low internal inductance are used. As Fig 2 shows the diode current has lots of harmonics of 100 Hz and these should be bypassed to ground through the lowest reactance possible. Remember the diodes and don't use a capacitor 10 times bigger than necessary.

Two or more capacitors in parallel to make up the required value will give lower impedance in most cases.

73 de VK3AFW.

COMPETITION WINNER

The lucky winner of the FLUKE 8022B Digital Multimeter, kindly donated by the Australian Distributors of FLUKE products, Elmeasco Instruments Pty Ltd, is:

A J Parr, VK4AJA
127 Hyde Street,
North Rockhampton 4701

Congratulations to the winner and his magnificent prize has been forwarded to him by Registered Post.

The Publications Committee wishes to thank all members who submitted entries and particularly the donor of the prize, Elmeasco Instruments Pty Ltd.

The correct answers to the problem were Q1 = 1.509V, Q2 = 1.598V.

Comment: Thus the average meter will give an error of nearly 6% due to loading which is twice the accuracy usually claimed. An instrument with a 10 Mohm input resistance gives negligible error, as the correct voltage is 1.600V.

DON'T FORGET COMPETITION No 4 — Refer October AMATEUR RADIO Page 8.

SUBMIT YOUR ENTRY NOW — YOU COULD BE A WINNER.

Maurice Johnson, VK3ADJ, Manager of Elmeasco Instruments Pty Ltd, Melbourne, drawing the winning entry.

HEARD ISLAND COMPETITION

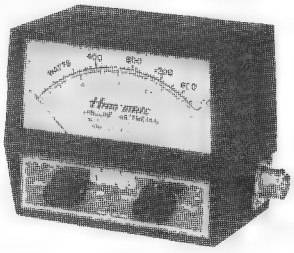
The VK6 DX CHASERS CLUB, who are organising the Radio Component of the Heard Island Expedition '83, invite your participation in a unique Contest.

WHAT WILL BE THE TOTAL NUMBER OF QSO's MADE BY VK0HI DURING THE HEARD ISLAND OPERATION ON 160 THRU TO 6 METRES?

PRIZE FOR THE NEATEST CORRECT ENTRY.

BIRD HAM MATE MODEL 4360 THRULINE WATTMETER

SPECIFICATIONS: Forward Power Range 0-200/2000W Reflected Power Range 0-200/2000W Frequency Range 1.8 -30 MHz
Valued at $135



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ENTRIES on the back of your QSL card or a sheet of paper with your name and address. Entries close last mail on Friday, December 31, 1982.

ADDRESS FOR ALL ENTRIES
VK6 DX CHASERS CLUB,
6 BRIAR PLACE,
FERNDALE, 6155 WA

RESULTS: The winner will be advised by Certified Mail and the result will be published in the first available AMATEUR RADIO after the return ot the logs from Heard Island.

It is proposed that VK0HI will operate for 5 to 6 weeks. The Antarctic summer has around 16 hours of daylight, two stations could be operating, and there will be three operators.

OUR AIM IS FOR AT LEAST 50,000 CONTACTS.

ALL ENTRIES ARE ACCEPTED IN GOOD FAITH AND THE DECISION OF THE VK6 DX CLUB WILL BE FINAL AND NO CORRESPONDENCE WILL BE ENTERED INTO REGARDING THE RESULT.

A COMPUTER LOG FOR THE AMATEUR

L. J. Forrest, VK2VUC
Hurstville, 2220

My original intention in joining the "Computer Brigade" was to have a computerised log. This article describes the present system and program.

Because of limited finance (I'm married) I could not afford elaborate disc drives and printers. So at once I had a problem — how to recall data from tape and utilize a 32k machine to the best advantage. Most log programmes I had seen used too much memory in storing all details for all contacts. The solution seemed to be to write a "log recall" programme whereby callsign and log entry number only are entered and recalled.

The programme listed here is the result. I estimate that 1,000 calls can be stored on a 16k machine. The programme is written for the Commodore 80 and 40 column machines but I am sure it can be easily modified for other systems. For example in line 10 the heart shape is the same as CLS or clear screen (shift CLR/Home on the Commodore 4016 . . . Tech. Ed).

System 80 and TRS80 users may find problems with lines 115 to 125 as well. These lines give even spacing and may be deleted if a new line 120 is used. The following changes apply.

10 PRINT CLS
120 PRINT T; A$

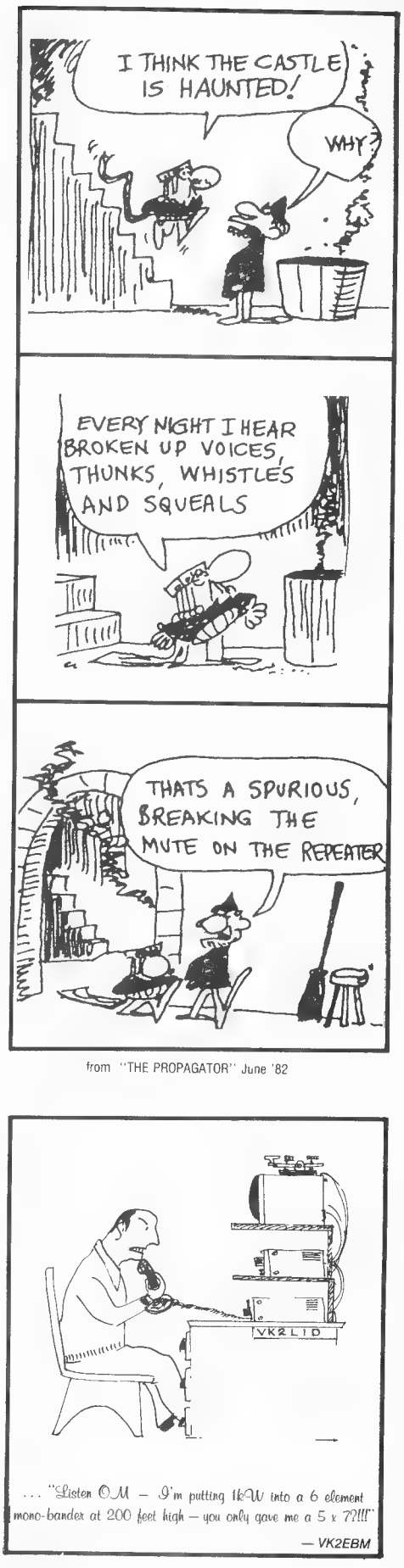
Data is entered in lines 140 to 9519 in the format shown for lines.

With this programme you can recall any individual callsign, all callsigns in a given country (e.g. type VK), or a given State (e.g. type VK2) or recall every entry by typing LOG. It also allows recall by log entry prefixed by L. For example to recall log entry 75 type L75.

I am sure there will be many modifications to suit individual needs. HAVE FUN.

Tech Editors Note:
The programme can be used in contests with data in the form callsign band/number band/number, callsign band/number etc.
e.g. VK2VUC 80/599 007 21/599 086, VK9ZZ 28/579 105.

```
10 PRINT"♥"
20 DIM A$(1000)
30 PRINT
40 INPUT"CALL REQUIRED";C$
50 PRINT:PRINT
60 LET L=LEN(C$)
70 T=0
80 READ A$
90 IF A$="END" THEN 9530
95 IF C$="LOG" THEN 110
100 IF LEFT$(A$,L)=C$ THEN 110
105 IF RIGHT$(A$,L)<>C$ THEN 80
110 T=T+1
115 IF T<10 THEN PRINT SPC(2)T;A$,
120 IF T>9 AND T<100 THEN PRINT SPC(1)T;A$,
125 IF T>99 THEN PRINT SPC(0)T;A$,
130 GOTO 80
140 DATAVK2VUC L1,VK2PFO L2,ZL1BXY L3
141 DATAWB7WUU L4,VK2PFC L5,VK2VUC L6
9520 DATAEND
9530 RESTORE:GOTO 30
```


I THINK THE CASTLE IS HAUNTED!
WHY?
EVERY NIGHT I HEAR BROKEN UP VOICES, THUNKS, WHISTLES AND SQUEALS
THATS A SPURIOUS, BREAKING THE MUTE ON THE REPEATER

from "THE PROPAGATOR" June '82

. . . "Listen OM — I'm putting 1kW into a 6 element mono-bander at 200 feet high — you only gave me a 5 x 7!!!!"

— VK2EBM

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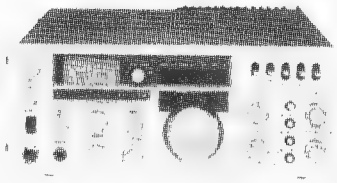

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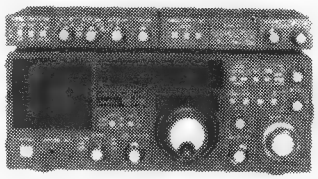

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Covers 2-29.999 MHz, All mode AC/DC
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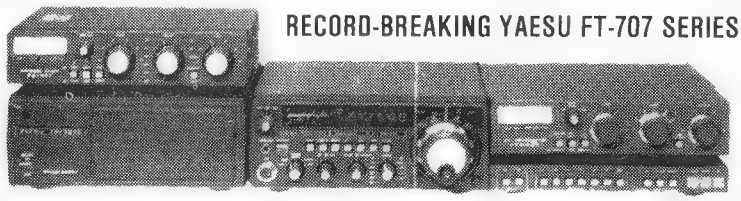

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FT-707S, 10W	$595
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- HP-200T/A 500 W SSB OUTPUT HF LINEAR W/PRE-AMP 12 V ... **$445**

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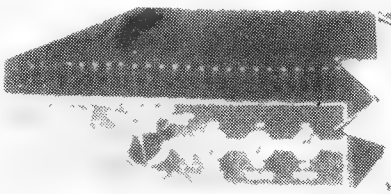

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GaAs FET has 0.8 dB gain. N.F. GS-144 ... **$65.** GS-430 . **$70**

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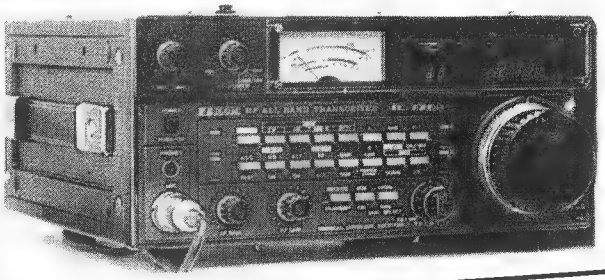

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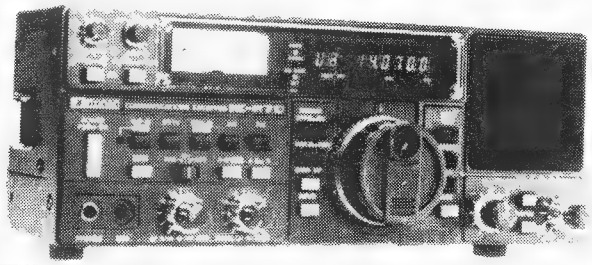

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ICOM direct feed mixer system with 10 Hz, 100 Hz & 1 kHz PLL steps. Dual VFO, SSB/CW/AM/(FM) modes. Passband tuning, notch filter, RX pre-amplifier/ATT Woodpecker blanker, monitor, selectable AGC.

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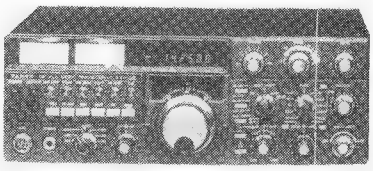

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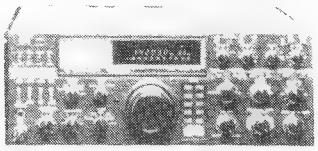

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Over the past six months we have seen reports of various DXpeditions in DX Bulletins and other publications. These receive a large amount of original information, but sadly, after reading a number of these, 50% of what they print is wrong. In some cases it is pure conjecture, and even downright misrepresentation. With so much incorrect information one wonders if these publications serve any useful purpose.

HEARD ISLAND — UPDATE

Compiled by: Hugh VK6FS

VK6 DX Chasers Club

Since the news first broke in AR, May '82 issue, that the VK6 DX Chasers Club members were investigating the possibility of bringing VK0 Heard Island on line, much talk has ensued. Some of the comments have been good and encouraging, but others have been mean and could even have been described as downright vicious.

Members of the group have repeatedly been subject to deliberate interference, (it certainly was deliberate as it would follow when we moved frequency) also innuendo has been resorted to by some people to try and infer something underhand was happening when we, in self defence, resorted to sudden frequency shifts to a pre-arranged plan, and also used reverse sidebands.

Innuendo was resorted to in order to suggest we were risking the safety of our expedition members by having the radio operators at Atlas Cove while the rest were miles away climbing Big Ben. That one can be answered by the fact that one of the radio operators is also a qualified Medical Doctor. Another qualified Medical Doctor is a member of the mountaineering party. I wonder if two Medical Doctors and a Medical Researcher would be sufficient numbers to stage the first ever Medical Conference to be held on Heard Island?

Our ship has received on air criticism. For Pete's sake, how much more do we need in safety factor? Anaconda II has twice circumnavigated the world. Even this year it participated in the Sydney to Rio de Janeiro Yacht Race and sailed round Cape Horn going down to Lat. 65° south looking for extra wind. We should be able to assume that by now Skipper Grubic would know a little of blue water sailing.

It has been suggested that Anaconda II will be battling the weather all the way from Fremantle (Perth) to Heard Island. Never has it been the intention to sail direct. The original, and present, itinerary is Fremantle North, then west, then south with the favourable trade winds to Amsterdam and St Paul Islands then further south to Kerguelen Island, then onto the last 200 nautical miles to Heard Island itself. Return will be direct to Fremantle with a tail wind. (Albeit a little brisk at times).

For safety the ship is equipped with satellite navigation, Omega, radar and two off-shore computers. Also radio access to OTC and other world wide coastal radio stations. If she should lose the 98ft main mast there is still the 74ft mizzen. Should that also go she has the auxiliary motor and as a last resort the VK0HI radio masts could be rigged for a jury sail, with a little bit of initiative by the mechanical engineer in the radio party.

Again the inference is "we know not what we do" and that certain radio organisations should tell us about the birds and bees. "Where angels fear to tread"!!!!!! Right from the outset the HEARD ISLAND EXPEDITION 1983 has been a registered business under Australian Corporate Law. Accountants have been appointed to keep an eye on the till and a firm of solicitors to attend to all matters legal.

Amateur Radio has been our outlet for reporting progress. However, due to the many steps necessary to obtain various permits, licences, equipment, etc, we have stated from the beginning that we would not publish anything that has not been confirmed in writing from the relevant authority, agent or sponsor.

The expedition has had the best advisers from its inception including many who have been to Heard Is. To drop names there are Professor Graeme Budd who has been there six or seven times including wintering over. Dr Phillip Law PhD, Director of Antarctic Division for 10 years. Warwick Deacock, Director of the Explorers Fund and a member of the 64/65 Patanella expedition. Two members of the expedition have been to Casey Base and one to Macquarie Island.

Insurance cover will protect the personnel, equipment and the overall operation from Heard Island. Some manufacturers would be horrified if they only knew what suitability tests we have run on their products. These tests may make an amusing article for AR at some future date when all the tumult and shouting dies down.

A very brief resume of the qualifications of the expedition:- William Blunt, *Architect, mountaineer and photographer*. Co-leader and Convenor; Dr Ross Vining, *Medical researcher, mountaineer, photographer, co-leader*; Meg Thornton, *Architect, mountaineer and photographer*; Alasdair McGregor, *Artist with extensive wilderness experience, will conduct resource inventory as requested by Australian Heritage Commission*; Jonathon Chester, *Professional photographer and mountaineer, participated in 1980 Australian Expedition to Annapurna III in the Himalayas*; Martin Hendy, *Surveyor and mountaineer, 1981 season at Casey Base*; Dr Richard Priddy, *Mountaineer and 1981 season at Casey Base as Medical Doctor*; David Shaw, *Electronics Technical Officer, amateur radio operator and 1980 season at Macquarie Island*; Alan Fisher, *Mechanical Engineer, USA amateur radio operator licenced 28 years*; Dr Charles Brady, *Medical Doctor, USA amateur radio operator, has specialised in Sports Medicine.*

The Department of Science and Technology have a standard five page list of compliances and questions that are to be submitted by groups or individuals before permission is granted for persons wishing to visit Heard Island, our submission from the expedition giving all the requested details became a book of 38 A4 size pages.

The Secretary of the Department of Science and Technology, in a letter to the Heard Island Expedition has given approval for the visit as planned and the reserved call of VK0HI has been issued to Dave, VK3DHF, the leader of the DXers making the trip.

The Heard Island Expedition have chosen a Patron, Sir Edmund Hillary, K.B.E. who was the first man to climb to the summit of Mount Everest. Some thirty years later the Heard Island Mountaineers will attempt to be the second group to reach the summit of Big Ben, which is an active volcano.

We believe this is the first time ever that amateurs have pooled resources with people of other interests to bring on one of the rarest and most inaccessible of Islands. We believe that in the 4-6 weeks that will be available, our operators will be able to allow for having to stand off the Island for up to a week waiting for the weather to abate sufficiently to be able to transfer men and equipment by rubber boat, through surf, on to an open beach with complete safety.

We have also realised that OLD SOL is not going to behave himself just because amateurs worldwide want to contact VK0HI. Solar flares could knock great holes in propagation for days on end. So therefore, we assume we may be able to get at least three weeks operating under good conditions in our 4-6 weeks stay in this Antarctic paradise.

ADDITIONAL LIST OF EQUIPMENT AND FOOD SPONSORS

Berri Fruit Juice, Biro Bic (Australia) Pty Ltd, Colemans, Cottees, Damer Thermal, Explorers Club, Guy Fuller Cook, Architects and Engineers, Henry Jones IXL, King Gee, Kraft, Nabisco, Namco Cast Ware, Nestles, New Zealand Alpine Club, North Face Equipment, Outboard Marine (Australia), Purox Feather Industries, Quaker, Robertson and Marks Pty Ltd, Rosella, Safcol Holdings, Sanitarium, Surf Life Saving Association of Australia, TNT, Vegetable Oils Pty Ltd, W. L. Gore & Associates, Wilderness Equipment.

BULKED DONATIONS RECEIVED

CDXA ..... !$1000
Virginia Century Club *$100
WIA VK4 Division $100

Misprint:

(1) VK2 Division quoted as $200 (Oct. AR) should have read $800.
(2) VK6CT (Oct. AR) should read VS6CT.

ADDITIONAL DONATIONS RECEIVED BY THE VK6 DIVISION

Acadiana DX Assoc. *$100, Mexico DX Club $9, N4WW *$50, VK1LF $5, VK1MM $10, Anon $50, VK3NNH $10, VK3YL $25, VK4NUN $15, VK5WO $50, VK6ZGA $10, VK7 Anon, $5, WIEW *$5.

ADDITIONAL LIST OF ASSOCIATE MEMBERS

L50545, VK CW QRPP Club, VK's 2AYF, BIX, DBH, DYP, KKK, OI, QC, 3AET, AGH, AXQ, BFN, BH, DBQ, KAR, YIP, YXK, 4AGW, BTX, CB, KSF, WIA, YX, 5AHP, ASZ, WD, 6ALD, ALJ, AWJ, CU, DQ, JP, KG, KKI, RU, YD, ZGA and W4FRU.

NOTES

1. **Denotes US currency.*
2. *!Denotes Canadian currency.*
3. *The list is correct as at the 24th September, 1982.*

HOW'S DX

Ken McLachlan, VK3AH
Box 39, Mooroolbark 3138

From listening around the bands, apparently very few VK amateurs took the opportunity of using the AX prefix, which was issued to celebrate the Commonwealth Games being held in Brisbane. The demand for it was definitely there when it was used, as anyone operating with the AX prefix would verify.

One VK, when asked by a VE in mid-September why the VK's had changed their prefix, uttered the statement that he wasn't quite sure for what reason it was being used though he had heard it and thought that it was a new call area, probably in Africa. The thought had not crossed his mind that it was an Australian prefix.

Perhaps the amateur is so close to the communications scene that he cannot *"see the wood for the trees"*. It is common knowledge that people only want to see or hear what they want, but the permission to use the AX prefix as an option was widely promulgated in AR and on Divisional broadcasts prior to the commencement date in mid-August.

Use of the prefix, particularly when the bands seemed to be "dead", brought stations in areas generally not the easiest to work, out of hibernation and into competitive activity. At times one felt like a DXpeditioner and to ease the QRM had to resort to working through call areas so everyone had a fair chance.

Twenty metres, normally renowned for reliability, excelled itself with wide openings spread across Europe on the short path, interspersed with openings at the same time into the South American Continent. Problems arose as to priorities at this QTH, and the Europeans won, due to the fact that they were more persistent with louder signals and it was the least point of resistance to battle through the QRM, especially in the early hours of the morning.

The adage, that certain prefixes are worth a five kW linear, was proved correct, as, with very little on air transmission time, nearly one hundred countries were entered in the AX3AH log. Unfortunately none were new.

The chores of QSLing are yet to be tackled when time permits, due to other commitments.

MORE ACTIVITY?

Will Andy, VK9ZA, be heard more often now that a Power Supply for the TS120S has been landed on Willis Island? This "homebrew" supply, with a professional "bought in the shop" appearance and performance, was designed and built by a group of enthusiastic friends including Alf VK3BOZ, Peter VK3FR, Dave VK3DHF, Peter VK3AZQ and Mark McKenzie.

This unsolicited gift from the sky will alleviate the daily backbreaking duties of "handling" the battery back and forth to the generator room for charging and allow more time to concentrate on adding countries to the log.

Andy is due to leave the island in mid-December. All QSL's via Gill VK6YL, direct or via the Bureau.

GLORIOSO

This rarer island in the Indian Ocean was activated on at least 10, 15 and 20 metres by FR0GGL/G. All QSL's to PO Box 386, St. Pierre, Reunion Island. To avoid a repetition of lost and mislaid mail that has occurred previously in this area, it would be prudent not to mention any connection with amateur radio on the envelopes.

CARD TURNS UP

One VK operator may have the multiple card and IRC receiving QSL managers disadvantaged. On not receiving a card and knowing of others that had made numerous attempts throughout the year, this operator made it known on every conceivable net at his disposal that some positive action would be made to the QSL Managers Society. Magically a card was received within the week. Perhaps this forthright positive approach should be adopted more frequently to achieve a better percentage of returns.

BOUVET

The licences issued for the trip proposed last year have not been renewed. It is now apparent that if any legitimate 3Y prefix will be heard this Australian summer it will only be from a team who have dropped off for routine maintenance of the Automatic Weather Beacon whilst en route to the Antarctic and it will not be a DX-pedition as originally planned.

BRAILLE DX SERVICE

A service to blind DXers is provided by Phil AF0H. Phil lost his eyesight some years back, gained an interest in radio and obtained a licence. The DXing in which he was interested had many problems which would not occur to a sighted person. The Braille DX Service was formed and he has arranged for a monthly tape service which will give current DX info, DXpeditions and QSL information on either an audio or braille format.

For further information for yourself or a DX friend contact Phil Scovell, AF0H, 8347 W. Sixth Avenue, Lakewood, CO 80215. USA. A self-addressed envelope with covering US postage or equivalent would be appreciated.

WELL-KNOWN QSL MANAGER — WA3HUP

THE BEST QSL MANAGER IN THE BUSINESS!! This is the claim of Father Dave, CE0AE, and there would be few DXers who have had dealings with this lady who would dispute this fact, and Father Dave should know. He is only one of the fifty-plus amateurs Mary Ann Crider, WA3HUP — QSL Manager of the rare ones, has in her stable.

This lady received her Novice licence in mid-1967. Within eight months she upgraded to a General Class Licence. Three hundred-plus DXCC countries worked and confirmed the challenge of obtaining the unrestricted Advanced Class Licence was beaten in 1976, and Mary Ann had all those frequencies that contained elusive call signs, which would mean a new country for her DXCC tally, at her disposal. Mary Ann's present country tally is 314/318 which places her on the ARRL Honour Roll. In all, the countries worked and confirmed are 332.

Mary Ann, shortly after obtaining her licence, thought she may be able to give a number of amateurs, who were located in much-wanted and remote areas, more operating time by doing their QSLing chores for them. Encouragement was forthcoming from Bob, W1YRC, who was famous in his own right as an expedient processor of cards for numerous stations worldwide.

The first station Mary Ann took over the paperwork responsibility for was Jim, CR6GA, as he gave Angola as a new country to so many. The release from the chore of checking his log allowed him much more on-air time and consequently this allowed CR6 to come off the "top" of the much-wanted stations list for many. Jim is now using the call ZS6ADO and he still has the same Manager.

The phrase "QSL via WA3HUP" has been used by 52 stations, some now QRT, but the cards still come and the logs are still available for checking against. Mary Ann recalls that the station that required the most QSLing was 8Z4A which was activated in late 1978. Some 40,800 QSO's were made and so far 30,000 cards have been received and replied to. The maximum output was around 350 cards per day on this station as the duties of the other stations that she managed could not be neglected.

It is not necessary to have too vivid an imagination to visualise the amount of work involved in such an undertaking. The mind boggles at the sorting, checking and writing involved without the stamping and the personalised note that accompanies many of the return cards.

Mary Ann, WA3HUP

Mary Ann has no hesitation in being able to recall the greatest thrill of her Amateur life. It was her first contact with His Majesty, King Hussein, JY1, and she describes it in her own words as "I was so excited and happy, just like a child getting her first doll". More excitement was to come as Mary Ann and her late OM Charlie, W3GE were invited by His Majesty to be his guests in Jordan. In her own words again, "Meeting JY1 was the most exciting thing in our life and the excitement is, and will always be there".

Charlie and Mary Ann made two more trips to JY-land prior to Charlie's untimely death in late 1980. Since that time, Mary Ann accompanied by her daughter Diane has returned to Amman for a visit. Mary Ann's JY8XG call has been activated by her during her visits.

This lively, energetic lady, apart from her other interests of philately where her speciality is in the collection of stamps bearing animal

and floral motifs, spends considerable time on the air, chatting with her friends worldwide and making new ones each day, and her closest friend Ruth Anna, WB3CQN, joins her at weekends on the bands.

Both ladies are members of ALARA and WARO being sponsored by VK YL's and Mary Ann feels a great satisfaction in "helping others whenever I am able".

One favourite saying of this very affable lady is "We all need someone and I am so blessed to have so many someone's throughout the world".

Mary Ann Crider, WA3HUP, QSL Manager extraordinaire, we are so glad to have someone like you.

BURMA

Everyone is aware that the cards for XZ5A and XZ9A were not recognised by the ARRL and WIA DXCC points. A more recent station that is operational out of Rangoon is DF8MP/XZ. Whether it will be acceptable to the ARRL DXCC committee will be proved when and if copies of the authorisation are presented.

Those that have XZ5A and XZ9A cards needn't despair as both are acceptable by CQ in its Awards programme.

MT ATHOS

Activity is probable in the near future. This rare one may appear around late December or early January on both CW and SSB, being operated by a combined SV/W group.

EX "G" NET

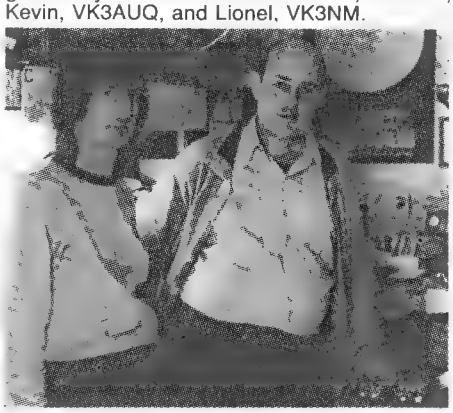
An ex "G" net which is orientated towards VK participation is carried on each Saturday at 0500 UTC on 14.346 MHz. This net is an offshoot of the worldwide net for "radio operators born in the UK and domiciled abroad" that is scheduled at 1900 UTC each Sunday on the same frequency.

MELLISH REEF

Wondering what the "voice" belonged to on the last Mellish jaunt or the face behind the "key" during the short stay on Willis? The photo reproduced below submitted by VK3DHT from a transparency by DJ9ZB tells all.

PENGUIN PARADE

The 1982/83 Antarctic Expedition members are sailing this month from Hobart. All members, including four ladies, have undergone considerable training and briefing in Melbourne. Included in the group is an amateur, Peter, VK0AP, who will be stationed at Macquarie Island. Peter, as well as operating on the HF bands, will operate six metres from the island due to the thoughtfulness and generosity of such amateurs as Gil, VK3AUI, Kevin, VK3AUQ, and Lionel, VK3NM.



Peter VK0AC and Gil VK3AUI

These amateurs have contributed equipment and freely given of their expertise and time in planning this venture, which will enable many VKs, as well as overseas amateurs, to conduct experiments and study propagation whilst at the same time notching up another DX Country on "SIX".

The loan equipment that Peter will be running on this VHF Band is a FT680 transceiver (VK3NM), LUNAR amplifier (VK3AUI & VK3NM) and a 4 element 6 metre Werner Wulf beam (VK3NM). (Brackets indicate the source of the equipment.) A programmed identification keyer using an EPROM, with the compliments of Ken, VK3GC, has been designed on similar lines to the unit which has been manufactured especially for VK0HI by the same four gentlemen.

Congratulations to all concerned on your foresight and unselfish approach in letting the amateur fraternity take advantage of Peter's location and participate in the chance of working a rare VK prefix. Activation of VK0 Heard and VK0 Macquarie will turn the world's Amateurs HF and VHF antennae towards "down under". A great start for 1983, WORLD COMMUNICATIONS YEAR.

QSLing for VK0AP will be handled by Peter, VK3FR, 29 Woodcrest Road, Vermont 3133.

COCOS KEELING

Neil, VK6NE, if everything went according to his meticulous planning, should have finished his DX jaunt on Cocos Keeling, where he was the guest of Frank, VK9NYG, and his XYL, prior to their departure from the island after a two year tour of duty. Neil did not go to Cocos Keeling armed with a Linear and key as was rumoured in overseas circles.

Christmas Island should be his home until the 10th of this month, then it is plain holidaying for another three weeks in South East Asia.

ALL QSL's to VK6NE, QTHR.

NEW QSL ARRANGEMENTS

Bill, VK3DWJ, has volunteered to assist Chris, ZL4OY/A, by taking over ALL the QSLing duties. Any station that has not received a card for this operation as yet, please forward direct or via the Bureau.

The mail address is Bill Johnson, Post Office, Skipton, Victoria, 3361 and Bill's young daughter has just started collecting stamps as a hobby. This rearrangement by Chris is going to make a lot of people very happy.

On behalf of all DXers, thanks are extended to Chris for the decision he has made and also to Bill for the mammoth chore he has voluntarily undertaken.

SAVING MONEY

Jan and Jay, W6GO/K6HHD, have recently been operating as FO0JO and FO0OJ, when they took a well-earned rest from their publication of the W6GO/K6HHD QSL Manager list. The editorial of the 31st Edition mentions that they would like nominations for the "Best QSLer" and the "Worst QSLer" so that they may be passed on to their readers to evaluate for themselves their chances of receiving the pasteboard back.

They ask for a few details with the reason on the nominations and they will not identify unless permission is given. Any VK who would like to participate may send it to my QTH and all information will be sent to them at the end of November along with my own list.

EAST MALAYSIA

Jim, VK9NS and Kirsti, VK9NL operating as 9M8JS/9M8NL made 10,500 QSO's on all bands. According to Jim's note, 80% of the operation was on CW. QSL route is to either Kirsti or Jim, PO Box 90, Norfolk Island, 2899, with SAE and postage.

Jim also mentioned that his return home to Norfolk Island, travel arrangements would be via Hobart. Quoting from Jim's aerogramme dated the 29th August '82, quote: *". . . to travel home via Hobart to tie up the contract for vessel for Heard Island. HIDXA is running pretty close to schedule (about two weeks late) which commenced in March this year (prior to Dayton et al) after finally aborting attempts last season.*

"The vessel CHEYMES II is ideally suited for the trip and has 37 Antarctic trips to its credit — although not under the present skipper. We were featured on Australian TV a couple of days ago. (FAME AT LAST.) Help is still needed in any form." Unquote.

ST. PETER & ST. PAUL ROCKS

Whilst the majority of VK's missed working this tiny atoll, many due to the QRM caused by a number of inconsiderates who decided that if they couldn't hear the operators, nobody else would.

L to R: EA8AK, DJ9ZB, VK2BJL, VK3DHT and the guy that got them there, Jack Binder, KB7NW, skipper of the "Banyandah".

The expedition was plagued by problems from the onset, culminating with being subjected to very high seas when reaching the atoll, which precluded the group from getting the large generator ashore.

Stuart VK5MS awaiting Bouvet

One of the few VK's that had a success story was VK5MS, who required two DXCC Countries to complete a "full hand". On receiving a phone call from a member of the VK6 DX Chasers Club, that alerte d him to the whereabouts of the much-wanted station and the cacophonous pile-up.

The contact was made, and when the confirmation arrives there is one other VK that will only require Bouvet to complete a "full hand".

EMERGENCIES

Amateurs who scan the bands in search of a new country to add to their DXCC list occasionally come across MAYDAY stations who are in need of urgent assistance. This particularly applies to Maritime Mobile stations, as maybe the amateur frequencies are the only ones at his disposal.

By chance, I was fortunate to come across a Handbook for Radiotelephone Ship Operators. This 48-page publication, including an insert on DISTRESS PROCEDURE, provides very interesting reading although it is intended as a regulations handbook for those wishing to pass the examination for Radiotelephone Ship Station Operators (Restricted standard).

Documentation of maritime specific frequencies and schedules of Coast Station listening watch periods are also included. I have made a personal addition to my copy by placing the charge free number of the "COASTWATCH" Coastal Surveillance Centre in Canberra telephone number and the emergency Police number of all the Australian states added as per the 1982/83 Call Book. This publication has been permanently located within easy reach of the operating position.

For those interested in knowing the correct procedure to adopt if they are confronted by the handling of an emergency, copies should be obtainable from the Australian Government Publishing Service or Department of Communications, State and District Offices at a cost of $1.40 plus postage.

NEW PREFIX

The prefix 5Y4 is being used by Kenya for a period of six weeks. One operator, Doyle 5Y4DE, will be operational during this period mostly around 14.195 - 14.205 MHz at 1430 UTC. Doyle advises that he will then revert to 5Z4DE and should be very active for the next two years. QSL route is via KA4S.

OVERSEAS VISITORS

Norbett, DF6FK, accompanied by his XYL, Judith, DL2ZAD, will be visiting the eastern states for the next few weeks. Occasional use of the DX bands will be made whilst renewing many on-air friendships with "eyeball QSO's".

Both Norbett and Judith hope to make many more friends whilst operational on various repeaters using the calls VK3DTD and VK3DSA respectively.

HEARD AND WORKED ON THE NOVICE BANDS

21 MHz
4X4KP, 4Z4QK, 6D5XMT, 9J2BO (W6ORD), 9M8JS, C21NI, CR9AK (JA1MIN), EA6NV, FO8GW, HI8LGS, HP1ANE, T22NS, T2AGD (SM3CXS), T30AC (WB6FBN), T30DB, VK0AN, VK0DX, VS5HG.

28 MHz
3B8DB (W5BDX), 4Z4QK, 9J2BO, AH3AC (Johnston Island), C21NI, FK8KAB, FW0AG (SM3CXS), HS1ANG, KC6SX (Caroline Island), LX1KW, T2AGD (SM3CXS), T30AC (WB6FBN), VK0AN, VK0DX, YJ8DB.

HEARD AND WORKED ON THE WEST COAST

1.8 MHz
AS6U, G3JMJ.

3.5 MHz CW
3D2DX*, AA6AA, CN2AQ, FW0AG*, KC6SX(JA8OW), KV4CI, N7AM, T21AGD*, T30CB*, W0ZV, W5ADZ, W7CPK, YB5AES.

3 5 MHz SSB
9U1TL, H44SH

7 MHz CW
3D2DX*, 9M8JS (VK9NS), AH6BK, C30LM (EA3BKZ), CO2HT, CR9M, FP8AA, FP8HL, FR0GGL/G, FR7BP (W0AX), FW0AG, HI3JEI, KC6WS (AD1S), LX2FT, N0ZO/DU2 (K0LST), ON5UK, T21AGD*, T30CB*, TI2PZ, VQ9XX (K6OZL), W5ODD/C6A (W5ODD), YV1AOT.

7 MHz SSB
5N8ARY (Box 439, Kano, Nigeria), 6Y5IC, 9X5SL, HC1GA, HZ1AB, JX1CY, PJ9GG, UP9CP.

14 MHz CW
3B8DB, 3D2DX*, 4K1H, 9M8JS (VK9NS), CT1AAL, EI5DI, FW0AG*, KC6WS (AD1S), ON6TW/LX(ON6TW), PY6HA, T21AGD*, T30CB*, VQ9GD (KA6MKY), W5ODD/C6A, YQ9XX (K6OZL), ZB2EO, ZB2SO

21 MHz CW
9M8NL (VK9NL), FO8EW, XT2AW (KN1DPS).

21 MHz SSB
EC8SD, FH0FLO, FR0GGL/G.

28 MHz SSB
HZ1AB, UM8MCW, WD8QCQ, YK1AO.

**Denotes QSL via SM3CXS.*
( ) QSL Route.

HEARD AND WORKED ON THE EAST COAST

1.8 MHz CW
AE6U.

1.8 MHz SSB
ZL2BFU, ZL4FB.

14 MHz
14/CW/3D2DX, 14/CW/4K1D, 14/CW/9M2OK, 14/CW/IS0AGP, 14/CW/IS0PEC, 14/CW/JT1BH, 14/CW/JT1KAI, 14/CW/OH0XX, 14/CW/TI2DL, 14/CW/UA1CY, 14/CW/UL7ECH, 14/CW/VP2MM, 14/CW/YV1BVJ.

14 MHz
14/SSB/3B8FL, 14/SSB/3D2DB (Box 372 Suva), 14/SSB/4K0A (UA1ADQ), 14/SSB/4X4YM, 14/SSB/4Z4OL, 14/SSB/6Y5IC (G3XTJ), 14/SSB/8P6AA, 14/SSB/8P6CC, 14/SSB/8Q7AV, 14/SSB/9M2EE, 14/SSB/A35WM (DJ1WM), 14/SSB/A4XHZ, 14/SSB/A6XAW, 14/SSB/A71AD (Box 4747 Doha Qatar), 14/SSB/AH2AR, 14/SSB/C21DM (Box 316 Nauru), 14/SSB/C21EF, 14/SSB/C21NI, 14/SSB/C30MK (EA3WZ), 14/SSB/C53F, 14/SSB/EA8AJU, 14/SSB/F6FIC/TZ, 14/SSB/FC9UC, 14/SSB/FD8HL, 14/SSB/FH0FLO, 14/SSB/FO0CAN(YL), 14/SSB/FP8AA (K2RW), 14/SSB/FR7CG/T, 14/SSB/FR0HIF (WA4VDE), 14/SSB/FW0AG, 14/SSB/GW4OMF, 14/SSB/HH5CB, 14/SSB/HK3YH, 14/SSB/HK4BVR, 14/SSB/HL0B, 14/SSB/HL1AHD, 14/SSB/HR1RBM (HR2 Buro), 14/SSB/HS0HS, 14/SSB/HS1BV, 14/SSB/HS6AMO, 14/SSB/HZ1TA (OE3YLK), 14/SSB/IT9AUA, 14/SSB/IT9PSG, 14/SSB/IT9VQC, 14/SSB/J6LB, 14/SSB/J73PD, 14/SSB/J88AR, 14/SSB/JY3ZH (DJ9ZB), 14/SSB/KA2CC, 14/SSB/KC6SXC (JA7SDV), 14/SSB/KH2AP, 14/SSB/KH6LW/KH7, 14/SSB/KX6OA, 14/SSB/KX6QM, 14/SSB/LX1KE, 14/SSB/OX3JF, 14/SSB/P29JP (WD4PEQ), 14/SSB/PJ9AA, 14/SSB/PJ9EE, 14/SSB/PY3CB, 14/SSB/PZ1PK, 14/SSB/T30BP (Box 486), 14/SSB/T30CB (SM3CXS), 14/SSB/T30DB, 14/SSB/T32AF (WH6AIF), 14/SSB/TA2BK, 14/SSB/TG9FU, 14/SSB/TI2CCC, 14/SSB/TI2J, 14/SSB/TI2JVA, 14/SSB/TI2JVA/TI5, 14/SSB/TI2RI, 14/SSB/TL8GE, 14/SSB/UG6LO, 14/SSB/UK1PGO, 14/SSB/V3KT, 14/SSB/VO1CA, 14/SSB/VO1EJ, 14/SSB/VP9CP, 14/SSB/VR6TC, 14/SSB/VS5DD, 14/SSB/VS5DX, 14/SSB/VS5MS, 14/SSB/VS6CT (KB9N), 14/SSB/VU9AU*, 14/SSB/VU9BBJ, 14/SSB/XZ9A, 14/SSB/XZ9B (YL), 14/SSB/YB9VA, 14/SSB/YS1GMV, 14/SSB/ZB2EO, 14/SSB/ZF1GC (VE4XN), 14/SSB/ZK2KH (DJ9KH), 14/SSB/ZL4PO/C (ZL4KI).

21 MHz
21/CW/N5MF, 21/CW/W9SC, 21/CW/WH2ADG.

21 MHz
21/SSB/3D2DX (SM3CXS), 21/SSB/4N4TN, 21/SSB/5H3DM, 21/SSB/5W1EL (DJ1WM), 21/SSB/5W1KE (DJ9KH), 21/SSB/8Q7AZ, 21/SSB/9U5JM (WA3VDE), 21/SSB/A71AD (Box 4747 Doha Qatar), 21/SSB/A92P, 21/SSB/FH0FLO, 21/SSB/FM0GA, 21/SSB/FR0GGL/G, 21/SSB/I0SCD, 21/SSB/I0WLL, 21/SSB/IT9ZWG, 21/SSB/KC6IN, 21/SSB/OK2BJR, 21/SSB/T30DB, 21/SSB/T32AF, 21/SSB/UJ8JCT, 21/SSB/YU7DX.

28 MHz
28/SSB/A71AD (Box 4747 Doha Qatar).

**Call No change to 9 until Dec '82 for "Asian Games".*

CW LISTENING WITH ERIC L30042

28 MHz
DL3RD, JA, P29NPL, UA0KCJ, UB5IQF, W7PEW, ZL1ATW.

21 MHz
AH2G, CT4TK, DU1REX, DX1F, EA6KZ, EA7DCZ, FK8CE, FO8FW, HC1VU, HS1ALV, KA5DX, KL7VZ, T30AT, UI8BI, VE2HQ, NL7J, YB4YB, YJ8LT, ZS6BYI, 8J1RL, 9H1CH, 9M8NL.

14 MHz
CO2PY, CR9M, CT2QN, EI4DMR, OH2SX/CT3, EA1JO, EK0K, FC8TT, FK0AF, FO8FW, HB0/DL1GK, HK1JJ, KP4P, KV4BQ, OZ2AGR, UC2CFA, UK2BBX, UK0CAW, VQ9CI, XE1JTR, YVJANT, ZB2EO, 4S7CF, 5B4LP, 6Y5RA, 9M8JS, 9M8NL

10 MHz
DL5KAW, F9YZ, FG7BG, G4ATZ, GW3AHN, HB9ANX, JA1BFN, OE9SLH, PA0RUY, SU1EC, VE3HLS, VP2MIX, YB5AES, DL2GG/YV5.

7 MHz
W5ODD/C6A, CT2EV, EA2IA, EK0K, EI9Q, F6CPO, FO8FW, FW0AG, HB9AHL, GI3OQR, HK3YH, HS1ALV, LZ2RB, KV4CI, OK1KQJ, T2AGD, UB5IIB, UC2SLO, UO5OWN, YU3DKR, YV1AOT, 3D2RW, 4X4VL, 6Y5DZ, 9M8JS.

3.5 MHz
JA, OH2PM, SM3VE, UK2PCR, UW3BF, UK9FER, UL7NAR, UR2QD, W3CV, 5Z4CS.

QSLs RECEIVED DURING SEPT 1982

C21NI, FK8AL, FO0WA, IJ7ET, PY4BUA, T30BG, VE1ZZ-VE2DC-VE5JS—VE5XU (all 10 MHz), PJ7ARI, VQ9XX, N5RM/KH0, KM2DXU (10 MHz), YB4GF, ZB2EO, ZK1DX, ZK2TA, VP2MIX (10 MHz), ZS5YN, 6Y5HN, 9V1TX.

QSL MANAGERS

A35JL *(K9AUB)*, C30LM *(EA3BKZ)*, C30MK *(EA3WZ)*, C30ML *(EA3BKZ)*, C30ND, (EA3BKZ), C30OH *(DL8OH)*, C31ZE *(DF9SP)*, CN8CU *(WA3HUP)*, CS5SRL *(CT1AHU)*), EJ22VJT *(G3ZQS)*, EK0K *(UA9OBA)*, EP2TY *(JR3WRG)*, F0FLR/FC *(DF2YJ)*, F0FWW *(OE31BW)*, FP8AA *(K2RW)*, FR7BP *(W0AX)*, HL9AZ *(AD8R)*, HR1JSH *(WD6WOD)*, HS1AMB *(LA5NM)*, JY3ZH *(DJ9ZB)*, KC6SX *(JA8OW)*, KC6WS *(AD1S)*, KH6LW/KH7 *(KH6JEB)*, K4YT/5N0 *(W2TK)*, N0ZO/DU2 *(WB3IET)*, N6DPH/DU2 *(WB3IET)*, OY1KH *(W1JTI)*, S1AB *(DL2NO)*, S1AH *(DL2NO)*, S1AS *(DL2NO)*, T2AGD *(SM3CXS)*, T21AGD *(SM3CXS)*, T30CB *(SM3CXS)*, TG9EW *(I0WDX)*, TL8GE *(F6FYD)*, UA02DA *(UA3AEL)*, V2AZE *(G3EBR)*, V3TV *(G3ATK)*, VK9ZA *(VK6YL)*, VP2MO *(KA4BOT)*, VP2MM *(AB1U)*, VS6CT *(KB9N)*, VQ9GD *(KA6MKY)*, W5ODD/C6A *(W5ODD)*, XT2AW *(KN1DPS)*, ZF1GC *(VE4XN)*, ZF2CZ *(WA3UFI)*, 4N4TN *(YU4HA)*, 5H3DM *(G3NXR)*, 6W8DY *(VE4SK)*, 6Y5IC *(G3XTJ)*, 8P6KY *(K2QIE)*, 9M8NL *(VK9NL)*, 9M8JS *(VK9NS)*, 9Q5VT *(K4YT)*.
Managers shown in brackets.

THANKS:

Thanks are extended to overseas amateurs including such calls as EA1VG, G3NBC, JY5HH, ON5NT and WA3HUP for their assistance. Overseas publications including CQ, THE DX NEWS SHEET, LONG SKIP, RADCOM, QSL MANAGERS LIST, QST and WORLD RADIO which have been read with interest. Contributions from VK amateurs including VKs 2DZZ, PS, 3FR, UX, DET, DFD, DKK, PBA, 4AIX, 6AJW,HD, IH, IT, NE and YL and Eric, L30042. **AR**

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*WE WILL TRY TO MEET THE PRICE OF THE OPPOSITION!

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CFL-230 300 Hz	$79
NSD-515 (+ $15 Frt)	$1620
NDB-515 P/Supply	$209

THIS MONTH'S SPECIALS:

Demtron GLA100 kW HF Linear	$540	$390
Info Tech M500 with 12" Monitor	$1799	$1199
Kenwood 430, 50W UHF Linear	$229	$139
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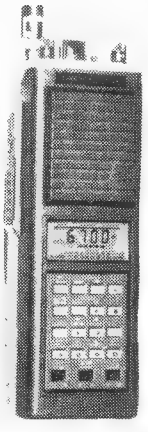


AUSTRALIA'S BEST HANDHELD!

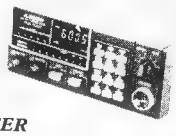
AZDEN PCS-300

— the standard for comparison — the performance of this transceiver cannot be matched with any similar handheld 2M, FM transceiver on the market today.

$299

WRITE FOR COLOUR BROCHURE

THE BEST ON THE MARKET!



NEW!

AZDEN PCS-3000 $395

MICROCUMPUTER 2M FM TRANSCEIVER

* 8 mHz freq. cover, incl. CAP/MARS BUILT IN
* Musical tone accomp. keyboard entries
* Pushbutton freq. control from mike or panel
* 8 Channel memory with instant memory recall
* Programmable band scan
* 25 Watt output * Mike has volume/squelch control

WRITE FOR FULL SPECS OR SEE OUR CATALOGUE

SPECIALS FOR THIS MONTH
ANTENNAS AND ROTATORS

TET HB 33 AP (3 element tribander)	$312
KR 400 Rotator	$149
	$461
Special package deal	$400
TET 34D (4 element tribander)	$346
KR 400 Rotator	$149
	$495
Special package deal	$421
TET 35C (5 element tribander)	$429
KR 400 Rotator	$149
	$578
Special package deal	$499

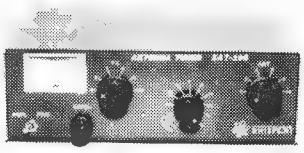
ROLL YOUR OWN

SKT-300 Antenna tuner, 300W 10-80m coax & random wire, all parts except box & wiring	$49
SKT-1200 antenna tuner, 1.2 kW, 10-160m coax & random wire, all parts except box & wiring	$99
MIZUHO VFO-5 This unit can be used as local OSC, in a direct conversion receiver or as a VFO in a transmitter or transceiver together with an SG-9 above. It consists of OSC, buffer, amplifier and RLT	$35
MIHUZO VFO-7, VFO or QRP transmitter	$35
MIHUZO QP-7, 7 mHz TX QRP kit	$26
MIHUZO QP-21, 21 mHz TX QRP kit	$26
MIHUZO QP-50, 50 mHz TX QPP kit	$29.50
MIHUZO MOD 1 Modulator kit	$26

Variable capacitors, coils, roller inductors, high volt inductors, torroid cores, antenna tuners and tuner kits.

All band antenna $53.00

TRANSMISSION LINES
CERAMIC INSULATORS



EXCITING NEW ANTENNA TUNER
EMTRON EAT-300

MARINE — AMATEUR — COMMERCIAL APPLICATIONS

THE BEST 300W ANTENNA TUNER ON THE MARKET. THE FINEST AMERICAN COMPONENTS GIVE YOU QUALITY PERFORMANCE AND SATISFACTION.

NOW $149

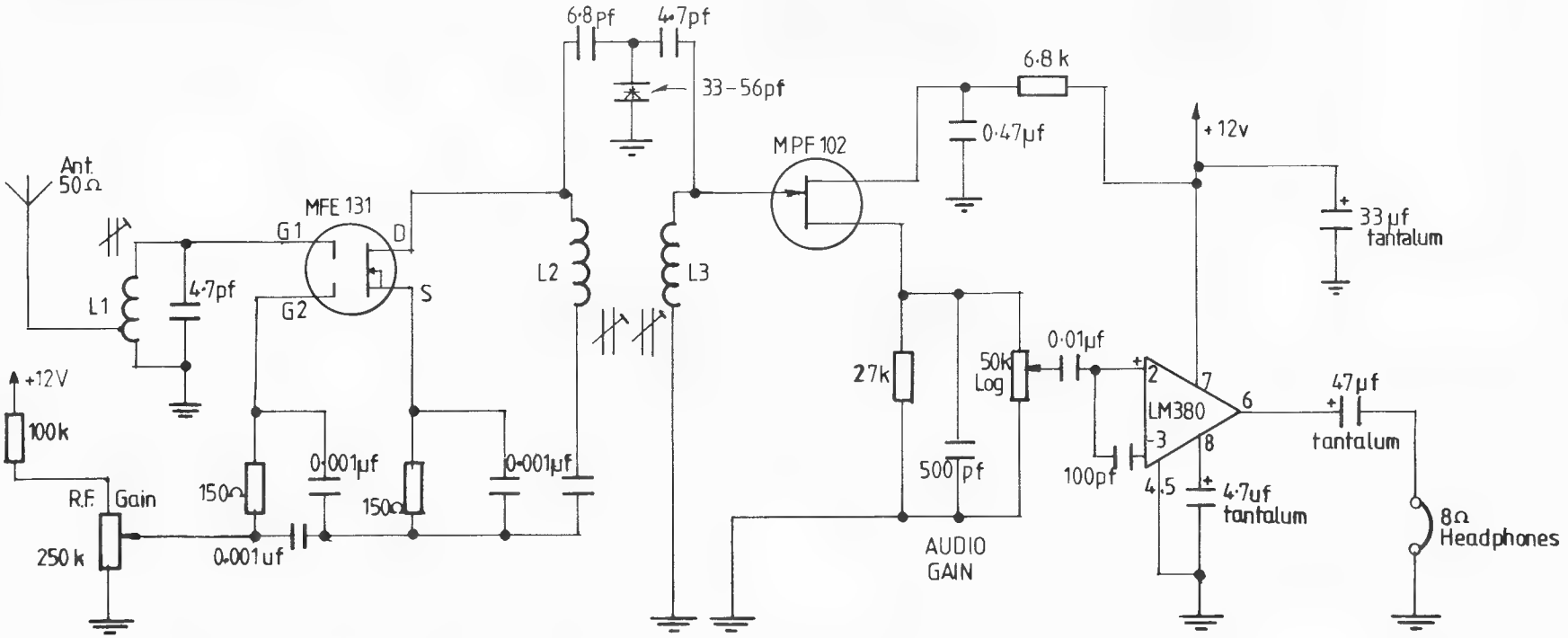
ATTENTION SWL! Two new code converters released by Telereader! The most sophisticated CWR 670E. CW/RTTY/ASCII converter at **$447**, and the all new CWR 610 code master-CW/RTTY at only **$249**. Now tune into hidden frequencies with your receiver, code converter and your TV set. Get a free "World Press Services" handbook with every purchase. Now is the time to start monitoring the hidden signals — world press, embassies, Interpol, stock market, spies, pirates etc. Write for full details.

W01112

144.250 MHz Fox-Hunting Sniffer

From "Gateway" February 1982

Bandwidth increased by decreasing valve or Bandwidth decreased by increasing valve. Antenna is usually 3 element beam.



COIL DATA

L1: 5 turns, 22 B & S tinned copper wire spaced over 10 mm, tap at 2 turns from cold end.

L2 & L3: 6½ turns, 22 B & S enamelled wire, spaced over 10 mm.

L1 is wound anticlockwise up the former. (Neosid 722/1 for all formers.)

L2 & L3 are wound clockwise and coils are spaced ½ in. apart inside double shield can Neosid 7300.

The start of each coil is the "cold" or "earthy" end. All slugs are F29 type ferrite. **AR**

Tasmania's Youngest Amateur

Jim Linton VK3VKC/VK3PC
4 Ansett Cres., Forest Hill 3131

Tasmania's and possibly Australia's present youngest licensed Amateur is 11-year-old David Lyneham, VK7NEP of Kingston.

After being introduced to Amateur Radio by Doug Parish VK7AZ, David and his mate Matthew Fletcher, 10, settled down to the work ahead in gaining CW proficiency, theory and regulations knowledge.

David passed all three sections of the Novice exam at the last Hobart examination; however Matthew missed out on the theory paper.

But the friendly rivalry between the boys has seen Matthew keep up his study with the aim of passing the theory exam this month, and taking away David's title of being VK7's youngest Amateur.

David and Matthew have been heard on the Novice bands putting VK7NEP to good use on both phone and CW.

While it may be a little early in this world of rapid change, David says he hopes to "get a job in electronics" after leaving school.

In the meantime he's keeping up the study and CW practice for the day when he can sit for the AOCP exam.

HOW IT ALL BEGAN

About 12 months ago Doug was approached by an organisation called "Explorers Unlimited", which encourages children to take up hobbies and all sorts of outdoor activities.

Being an Amateur Radio operator he was asked if he could teach a few boys morse code and Doug soon found himself with a class of four.

Two of the boys were only interested in learning the code for the boy scouts, but David and Matthew were bitten by the Amateur Radio bug while in Doug's shack.

As Doug explained: "They saw my gear and became a little intrigued and wanted to go a little bit further than just learning morse code.

"After teaching them code I got stuck into the theory with them."

Doug says he used an electronic keyer to teach the boys and made sure they could copy 5wpm before letting them touch a key themselves.

This method proved very successful because both boys, says Doug, got 100 per cent for their morse code exam.

David had a slight prior interest in electricity and had wanted to do something with electronics.

"He was really an excellent pupil. I got him a copy of Understanding Amateur Radio, and made sure he had a thorough grasp of that," said Doug.

"He consequently built his own power supply for his FT707 and I just supervised.

"David really learnt his stuff on the practical side."

Doug said Matthew wasn't quite as advanced with the theory, but he has regularly been popping into the shack and aims to tackle the November exam and get a pass in theory.

It was the first time Doug had coached anyone for their Amateur ticket and he says it was a learning experience for himself as well.

He's been licensed since 1947 and after a stint in the Navy he was seconded to the Army as a signals instructor.

Doug says "I found teaching the boys enjoyable and learnt a little bit myself.

"Being totally blind I hadn't fiddled with transistors and I had to do so to keep in front of the boys.

"Everything we talked about was done practically.

"We got a handful of resistors, batteries, meters, transistors and so on.

"We switched transistors, altered the base, worked out the Beta and things like that.

"Doing it practically as well as explaining the theory, it really registered in the boys' minds."

Doug says he's convinced that if other boys and girls of primary school age are exposed to our hobby many more would be on air under their own calls.

David and Matthew are really enthusiastic and, due to the efforts of Doug, now have a good basic fundamental grasp of electronics.

Are they that capable at the age of 10 and 11 of getting their full ticket?

Doug replied without hesitation: "I tell you what, I'd like to be as sure of winning Tatts as I would of them getting the AOCP if they had the opportunity of sitting the exam."

However it looks as if they'll have to wait a few years yet because of the current minimum AOCP age limit of 15 years.

It's interesting to note that possibly Australia's youngest-ever full-call holder passed her ticket in 1935.

The Wireless Institute journal 'Amateur Radio' reported in its April 1935 edition that a Miss McKenzie, aged 12, daughter of VK4GK, had just obtained her AOCP.

Her results were, the article said: "Exemplary, and a pattern for all.

"Sending, 98 per cent, Receiving, 90 per cent, Regs., 70 per cent, Theory, 78 per cent."

MORE YOUNG AMATEURS FOR TASMANIA?

Peter Dowd VK7PR hopes to develop a bigger Amateur Radio involvement in Tasmania's schools.

He's a teacher at Newtown High School and for a trial next year he'll be conducting an electronics course which includes morse to 5wpm.

Peter says the course will be an elective topic on the school's syllabus.

Newtown High has about 700 boys aged 13-16.

Peter Dowd said: "During the year there'll be three semesters of 12 weeks on the new electronics course.

"After that I hope to start a radio club at the school."

The Newtown High boys will be visiting Amateur shacks and will build their own code oscillators.

Peter said: "One major thing to be taught is the operating procedure and the traditional decorum of the Amateur Radio Service."

David and Matthew tune into the Novice Bands. *Photo courtesy: Mercury-Hobart*

This was designed to break any bad habits picked up by experience with CB radio.

The boys who show a greater interest and ability will be given encouragement to go on and get their Novice ticket.

Peter says he would be glad to hear from any other teacher in Tasmania who would also like to adopt a similar electronics course in their school.

AR

LONGEVITY

The Horse and Mule live 30 Years
And nothing know of Wines or Beers,
That Goat and Sheep at 20 Die
And never taste a Scotch or Rye,
The Cow drinks water by the Ton
and at 18 Years is mostly done,
Without the aid of Rum or Gin
The Dog at 15 cashes in,
The Cat in milk and water soaks
And then in 12 short years it croaks,
The modest, sober, bone-dry Hen
Lays eggs for nogs then dies at 10,
All animals are strictly dry
They sinless live, then swiftly die,
But Sinful, Ginful, Rum-soaked Men
Survive for Three Score Years and 10,
And some of us — a Mighty Few
Keep drinking till we're 92

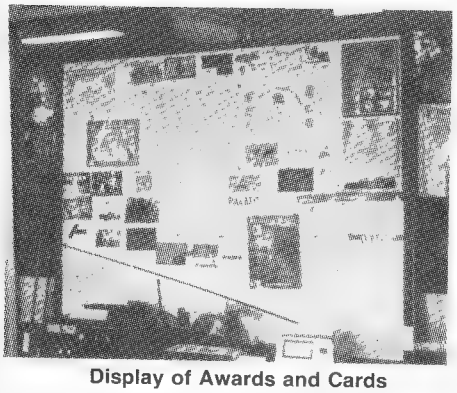
—From "The Clubman" Aug '82

AR

NHULUNBUY — The Green Oasis

Richard Hand VK8KRD
Box 211, Nhulunbuy, Gove, 5797 N.T.

Recently Nhulunbuy on the Gove Peninsula celebrated its tenth anniversary and as part of the celebrations an Amateur Radio display was held in the town square.



Display of Awards and Cards

One of the most isolated places in Australia is the town of Nhulunbuy, situated on the Gove Peninsula, 650 kilometres due east of Darwin and, as the crow flies, some 2850 kilometres north-north east of Sydney. Set on the shores of the Arafura Sea, the small mining town with a community of just over 4,000 is a green oasis in the harsh country of the Arnhem Land Aboriginal Reserve.

It is possible to reach Nhulunbuy by four-wheel-drive vehicle along a 780 kilometre track through the bush from Katherine, for a few months during the dry season. Ships and barges regularly call at Gove with supplies and the two domestic airlines, TAA and Ansett, provide scheduled flights to Darwin and Cairns.

In 1964 Swiss Aluminium (Australia) Pty. Limited and Gove Alumina Limited, a consortium of seven major Australian companies, created Nabalco Pty. Limited, the company which manages one of the largest single mining enterprises in Australia. The bauxite treatment plant at Gove produces over a million tonnes of alumina a year, which is exported to various countries around the world. Bauxite is also exported at the rate of two million tonnes each year.

Nhulunbuy, which recently celebrated the tenth anniversary of its incorporation as a town (the third largest in the Northern Territory), is complete with the amenities found in other centres. With five sports ovals, nine hole golf course, and Olympic size swimming pool, squash and tennis courts, volley-ball and basket-ball courts there is every opportunity for those who are sports-minded.

Speedway and motorcycle tracks can be found just a few kilometres beyond the residential area; go another five or six kilometres and one will find ranges for pistol, rifle and shotgun. A boat club, a fishing club, a surf club . . . and more; over 60 separate sporting and social clubs in this one town! And amateur radio also plays a part in recreational activities.

AMATEUR ACTIVITY

Amateur radio has played a significant part in the history and development of the Gove Peninsula area. A radio club was established in the nineteen sixties by the late "Tubby Vale" under the call sign VK8UG, located at the Eldo Tracking Station, which closed down in 1970.

The first resident amateur of Nhulunbuy was Keith VK8KG who ceased operation in late 1975 and is now ZL1AMF.

Andy VK8AC operating the display equipment.

Six of the seven resident amateurs of Nhulunbuy I to r: Richard, VK8KRD, Terry VK8NTT, Darell VK8DH, BOB VK5XZ/8, Andy VK8AC and Harry VK8NHR.

When Nhulunbuy's telephone and telegraph communications were disrupted at Darwin by Cyclone Tracy in December 1974, VK8KG passed many important messages to the outside world.

Andy VK8AC, who remembers the days prior to the establishment of the town, will be returning from the community in the near future to VK1. It is partly due to Andy's encouragement that the amateur population has grown to the present level. There are currently seven active amateurs and several prospective candidates resident in Nhulunbuy.

Melville Bay is a popular stopover for visiting maritime mobile operators.

In conjunction with Nhulunbuy's tenth anniversary celebrations a display was held in the town square to show various aspects of amateur radio. **AR**

●●●●●●●●●●●

How long an Amateur?

From Fort Dodge Amateur Radio Club (By WOSH)

Have you ever listened to a QSO on a repeater or on HF and had a pretty good idea, a good betting chance, that the op. speaking had not been an amateur for long? What gives you the best clue — procedure used or vocabulary used?

It's my contention that procedure is fairly easy to learn and that it is the vocabulary — the common usage that is changing on the amateur bands before our very ears.

Many times, in listening to the repeaters particularly, or on HF, I have a real good notion that the amateur has not been licensed very long . . . or has picked up some lingo from another source of two-way radio in the past.

The problem is — how does one avoid sounding like a past CBer if there is no one to advise on the kind of buzz phrases that "give it away"? And isn't it quite possible that such vocabulary usage promotes itself . . . that operators today can hear, on the amateur bands, what they think is common usage, and blend what they hear into what they use as "amateur slang" without knowing that what they heard was not in use on the amateur bands before the loss of 11 metres. And who is to say what is "amateur radio terminology" and what isn't anyway?

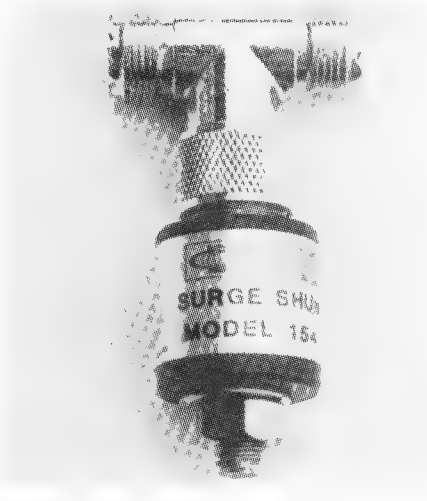
What follows is my opinion of some of the comments you may hear on 146 MHz and elsewhere that tends to "give it away" as far as I am concerned. These phrases were not heard on the amateur bands (at least not by me) prior to the 11 metre CB band:

Come back on that — come back — got a copy on me?

Radio check — back-to-ya — base — home base — what's your personal?

Some of these have subtle differences. You may not agree with me on some, and you may have some good examples not mentioned. Our common English usage changes with time . . . and our amateur English does also . . . where do we go from there? **AR**

AR SHOWCASE



SURGE SHUNT

Protection of costly solid state communications equipment from high voltage transients, the most common being lightning strikes, is a problem to all amateurs.

The R.L. Drake Company renowned for the production of high quality communications equipment for the amateur have released "SURGE SHUNT", a unique package that will provide adequate protection from lightning and voltage transients entering a transceiver from the antenna. This remarkably small device can be easily inserted into the feedline of communications equipment by means of a Tee connector.

Claimed figures are an insertion loss of less than 1 dB up to 400 MHz and 1.5 dB maximum up to 500 MHz. The arc threshold varies between 230 and 750 volts depending on transient rise time.

For further information contact Elmeasco Instruments Pty. Ltd. Offices in Sydney, Melbourne, Brisbane and Perth.

NEW TH5Mk2 TRIBANDER

The new TH5Mk2 is a five element broadband tribander for 20, 15 and 10 metres and is considerably smaller than the TH7DXX antenna which was introduced earlier in the year.

The TH5Mk2 will load tube-type or solid state auto-tuned rigs from band edge to band edge on 20 and 15 metres. On 10 metres, there is a choice of 28.0 to 29.4 or 28.3 to 29.7 MHz, all below 2:1 VSWR. The Hy-Q traps for each band are the most efficient technique for multibanding a yagi antenna. Factory assembled and pre-tuned traps are mechanically superior, and provide reliable all weather performance. With four active elements on each band, the average forward gain is an impressive 8.5 dB and average front-to-back ratio is 20 dB.

The relatively small dimensions of the TH5Mk2 will delight all DXers with limited available space. The antenna assembles on a 19 foot (5.8m) boom. With a maximum element length of 31.5 feet (9.6m) the turning radius is only 18.4 feet (5.6m). The assembled antenna weighs 59 lbs (26.8 kg).

Mechanically the TH5Mk2 is very simple to assemble with virtually no room for mistakes when the steps in the thoroughly detailed instruction manual are carefully executed. The antenna includes stainless steel hardware, the BN86 Balun and a sophisticated matching dual-driven element feed system as also used in the larger TH7DX. The antenna provides DC grounding for lightning protection.

For further information contact sole distributors:- P.O. Box 421, 1 Little Street, PARRAMATTA, 2150; P.O. Box 468, 7 Essex Road, MT. WAVERLEY, 3149; P.O. Box 871, 42 Commercial Road, FORTITUDE VALLEY, 4006.

DANTEL 90572 SPEECH-PLUS COMBINER

This new Speech-plus combining amplifier features plug-in active filters and duplex circuits on one compact plug-in module, allows simultaneous use of a voice-grade circuit for both low-speed data and voice signals and will fit in the Dantel 90000 series equipment shelves.

It may be utilized with FSK data modems, channel modems, order wires, baseband interface and telephone interface equipment, Scada systems and other compatible modules manufactured by Dantel to fill a variety of application needs in one complete assembly with a substantial cost reduction.

Plug-in filter modules are available for several different frequencies and feature a roll off of approx. 1 dB per Hz to 60 dB attenuation and can be equalized for high speed data.

Further information may be obtained from Scalar Distributors Pty Ltd, 20 Shelley Avenue, Kilsyth 3137.

AMATEUR RADIO LOG PROGRAMME

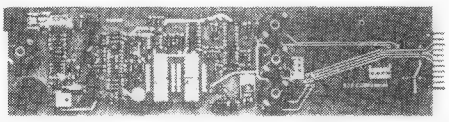
AT LAST! Something new for the Amateur Radio operator who is also a computer enthusiast. Until now you have felt that you had been forgotten but there is now a package, designed and written in Australia for the System 80 and TRS-80 Mod 1/LII computers, which should make the tedious job of log keeping "a breeze."

This disk based programme provides for up to 500 individual log entries and has a very powerful search facility which will allow retrieval of entries by their stored sequence number or by the call sign entered.

If there is a printer connected to the computer system, a series of reports can be produced including detailed log listings, call signs or call area.

The packaged programme is simple to run and comes complete with a detailed users manual.

All enquiries for this package (Cat X-3774) should be directed to Dick Smith stores and dealers.



COASTCOM 939 COMPANDOR

These units have gained widespread acceptance for use in satellite and terrestrial microwave systems where they are used to improve S/N performance and/or increase system voice channel capacity.

Now marginal and unacceptable voice circuits can operate at or near toll quality by installing a compandor at each end and the S/N improvement created can be used to save money on other more expensive parts. Adjustable unaffected level allows system optimization of channel loading and noise improvement.

Standard interface levels (+7 and -16 dBm) permit the integration of the Coastcom 939 into existing systems to improve voice quality or permit full system spectrum utilization. European and other interface levels are available as options.

The 939 can be used to double voice channel capacity with the same S/N performance, increase S/N ratio by 15 to 20 dB and reduce cross talk in multi-channel FDM carrier systems, whilst it is fully compliant with Intelsat specification BG46-92, meets CCITT recommendation G-162, has unaffected level settable between 0 dBm0 and -63 dBm0 in 1 dB steps and a flat frequency response (+ -0.5 dB over 300-3400 Hz).

Further information may be obtained from Scalar Industries Pty Ltd, 20 Shelley Avenue, Kilsyth 3137.

NEW VHF MARINE WALKIE TALKIE FOR THE SEAPHONE BAND

The Nirecom Model NR-6000 is a versatile one watt, hand-held transceiver which is designed to operate on any one of six channels within the VHF Seaphone band.

Due to the size of this unit, a small boat owner no longer has to worry about the security risk of expensive radio equipment on his craft when not in attendance. The NR-6000 is small and self-contained with an internal rechargable battery pack which gives complete freedom of use to talk to ocean liners, obtain weather forecasts or just keep in touch with a shore base.

This unit comes complete with one set of crystals for channel 16 (156.8 calling and emergency), a rechargable nicad battery pack, helical whip antenna, AC/DC charger, earphone, carry case and hand strap.

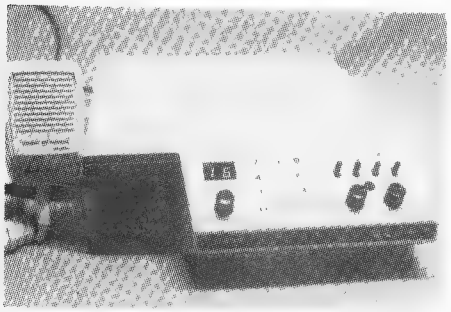
This new high performance, compact sized transceiver is approved for use in the Australian seaphone band by the Department of Communications and more details and information may be obtained from the Australian Distributer: GFS Electronic Imports, 32 McKeon Road, Mitcham, Victoria, 3132.

MAST RANGE TABLE

Clark Masts have produced a range table which details the wide range of masts available with extended heights of up to thirty metres and headload capacities up to 100 kgs. There is a model for practically any application.

These masts are fast erecting systems for all applications and are available for mounting on tripods, on vehicles or trailers and can be used in any extreme weather conditions from the centre of Australia to the arctic circle. (Some masts are NATO coded.)

For further information contact Scalar Distributors Pty Ltd, 20 Shelly Ave, Kilsyth, 3137.



NEW VHF FM MARINE RADIOTELEPHONE

The Standard Model C-855A, a 55 channel marine transceiver, has a design which combines economy in price and state of the art design by using two microprocessors.

It is designed to operate on the International VHF FM Seaphone band which enables the boating operator to obtain weather forecasts, talk with any telephone in Australia, communicate with other boats or just keep in touch with a shore base station.

The C-855A incorporates keyboard entry of channels with automatic scanning for up to ten channels. By incorporating a dual watch facility, high priority is given to the emergency channel (ch 16). Transmitter power output of the C-855A is 25 watts and approval from the Department of Communications has been given for its operation in Australian waters. This unit provides small boat owners with an economical alternative to other expensive FM and SSB radiotelephones.

For further information and details contact GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria, 3132.

NEW YAGI ANTENNAE

The new Y400 series antennae have been specifically designed for use on the 400-520 MHz band with 3 to 14 dB gains and provide economical and effective operation for point to point communication applications.

These yagis are manufactured from high grade seamless aluminium tubing (special heavy duty models feature stainless steel construction for use in corrosive or ice-prone areas) and feature a 4% bandwidth at a VSWR of less than 1.5:1 and VSWR 1.3:1 at centre frequency. A cable tail to N type female termination is provided which allows ease of access for waterproofing.

Also released is the "RF Control" yagi model Y415PT which has been specifically designed for use in RF control operations and fully conforms to DOC draft specification RB234C.

The Y415T is a fifteen element yagi with a multi-element reflector, sidelobe levels at any angle greater than 55 degrees from the centre of the main lobe will be at least 17dB below forward gain and is supplied with either an end mount or a centre-mount elbow.

These yagis are available from all Scalar Offices in Melbourne, Sydney, Brisbane or Perth.

WIA BADGES

Jennifer Warrington
59 Albert St, Clarence Gardens, 5039.

When I wrote the letter to the Editor, in the June edition of AR, I had been motivated by seeing several variations of the WIA emblem, to wonder, why the variations, and how the badge and its symbols originated.

It seems probable that the variations in design, position of wings etc, was a regional one; perhaps the local printer or block-maker didn't have one to copy or was only given a vague description.

Fig. 1

Fig. 2

(Figures 1 & 2 wings horizontal, Fig. 3 wings upside-down, Fig. 4 right-hand side, wings at 45° angle).

Fig. 3

The 'wings' and 'lightning' motif are said to have been derived from an Army Wireless Unit badge of WW1 and these formed a large part of the RAAF Wireless Reserve emblem authorised in 1935. It is interesting that the same badge denotes RAAF W/T Operator (air) and also his Naval counterpart. (Figures 4, left hand side; and 5, Wireless Reserve. Fig. 6 Naval Badge).

Fig. 4

Fig. 5

The 'original' WIA emblem appears to have been designed a year or two before 1922 (see Fig. 7). The fact that Tasmania was left off created some controversy, and Tasmania was subsequently restored to AR blocks around mid 1947.

Fig. 6

Fig. 7

I regret that I have been unable to discover any earth-shattering revelations, but I would like to thank the following people who provided material in one form or another.

Ian — VK3BTX, Don — VK4NN, Peter — VK3CIF, Maxwell — VK3ZS, Jack — VK5JK, Leith — VK5LG, and Brian — VK5CA. AR

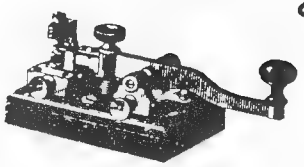
"Would you please report all after, '. . .'?"

— VK2EBM

"Nobody takes me seriously on air."

— VK2EBM

Idealism increases in direct proportion to one's distance from the problem.



POUNDING BRASS

Marshall Emm VK5FN (ex-VK2DXP)
Box 389, GPO Adelaide 5001.

CW ABBREVIATIONS

During the last year or so I must have seen at least a dozen different lists of abbreviations commonly used in CW. Some are more common than others, and it is these I intend to deal with here, as there would be little point in reproducing a further list. Because the abbreviations are pretty meaningless outside the QSO context, I will give some examples of typical transmissions and then discuss the abbreviations used.

UR FB SIGS RST 5 7 9 ? 5 7 9.

Insofar as U = You, it seems logical that UR means "Your," FB means "Fine business," and is used as a form of compliment. It can be used on its own, as in "FB JOHN, ALL OK," or it can be used as a favourable adjective to describe just about anything, e.g., "UR FB RIG ES ANT FB." Signals is abbreviated SIGS, and RST should be immediately recognizable as "Readability, Strength, Tone Report." The ? or IMI indicates a repetition. Except in contest operation, the RST numbers should be sent in full the first time, but N can be used for "Nine" in the repeat.

RIG IS FT200 ANT IS GP ABT 20 FT HI.

For common rigs the model designation is adequate; there is no need to spell out Kenwood or Yaesu, etc. ANT = Antenna, and some common type abbreviations are: GP (Ground Plate), VERT (Vertical), INV V (Inverted V), LW (Long Wire), 2 EL, 3EL, etc. (number of elements). ABT 20 FT HI means "About 20 feet high." Some ops, including me, use "UP" rather than "HI". And for the record, I use Imperial or Metric measurements depending on whom I'm working — if in QSO with an American station I use feet and Fahrenheit; the J's get metres and C.

Some other common expressions are used as salutations, such as the classic "CUL" for "see you later," and BCNU (just spell it out loud). The word "good" is frequently used, so it is not surprising that the abbreviation "GUD" is quite common. "SRI," "CPI," and "MI" are also often heard, meaning "sorry," "copy," and "me or my" respectively.

One last category deserves special mention — numbers. N is often used for nine, and T is often used for zero. Some discretion is required, and they should only be sent where the other op is expecting a number. RST 5 N N is pretty obvious, but "SKED AT TNTT" just wouldn't work.

In summary, abbreviations should be used where possible to make sending and receiving easier. If you use too many of them, or unusual forms, you are making life difficult for the receiving operator and defeating the purpose of the whole thing, which is *COMMUNICATION*. When in doubt — spell it out.

QUESTION OF THE MONTH:

A new Novice asked me about using "Vs" to enquire whether a frequency is in use. I wasted no time in telling him that a series of Vs is a **test transmission.** The correct way to enquire if the frequency is in use is to send "QRL?" and if it is you will hear "QRL." I have heard of people sending "IE," to which the affirmative is "E," but this usage does not seem to be common. One should determine whether the frequency is in use **before** sending Vs *(or anything else!).*

Next month's topic is CW Contest Operation — till then, 55 ES 73. **AR**

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AMATEUR RADIO IN THE SOLOMON ISLANDS

Our Neighbours to the North

George Sulc H44FE
Acting President SIRS

Amateur radio in the Solomon Islands has many facets: not only does it provide an opportunity to pursue a technical hobby but it is frequently used to complement other communication services.

The Solomon Islands Radio Society (SIRS) has currently twenty-eight members and runs a club station with callsign H44SI. Most amateurs in the Solomon Islands are located in and around the capital, Honiara, though there are a few scattered amongst the outlying islands. Because the majority of amateur operators are expatriates on contracts of two to three years there is a regular turnover, and membership of SIRS fluctuates from year to year. There is some six metre activity and SIRS operates a beacon on 52.004 MHz with the callsign H44HIR.

In addition to providing a fascinating hobby, and reducing the isolation many people feel living in the Pacific, amateur radio has frequently provided communications when other means of communication were not available. Some recent events of note, where amateur radio supplied services are: assistance with communications during the South Pacific Mini Games held in Honiara during July 1981; communications and the passage of information to some outer islands during cyclone Bernie, which passed through the Solomons in April 1982; arranging medical evacuations from outer islands to Honiara in emergencies; arranging for medical advice and marine rescue for yachtsmen passing through or near the Solomons. These activities, as well as DXing, provide spice to the Solomon Islands amateur's life.

Two notable incidents which took place recently illustrate the varied public service which has been rendered:

On the 15th June 1982, during a regular schedule, H44BU (Peter Bull in Buala, Santa Isabel) asked H44FE (George Sulc in Honiara) to arrange an urgent aeromedical evacuation. The patient had a strangulated hernia and Peter, who is the resident medical officer in Buala was most anxious that surgery be performed promptly, and yet the surgical procedure necessary could not be performed in Buala. The twice weekly flight to the nearby airfield, due the following day, had been cancelled.

Through H44FE an aircraft was arranged to leave Honiara at dawn the next day, and the patient was undergoing surgery at the Central Hospital, Honiara, by 0830 the same day.

A second incident involved a yacht which ran aground on the reef adjacent to the main approaches to Honiara, some twenty-five miles out:

At 2215 on the 16th July 1982, on the "Gunkholers" net conducted by H44KR (Joyce Stone) the call MAYDAY was heard. The weak signal came from the yacht Phat Duck (W6TE) which was reported to have struck the reef at the entrance to Sealark Channel. The leading light to the approach was not operating and the yacht had missed the entrance. Joyce Stone lives on a Chinese junk, which was anchored off the Yacht Club in Honiara, with no access to a telephone.

The immediate response by all stations on the net who could hear Bill on the Phat Duck was heart-warming and H44FE (George Sulc) contacted the marine search and rescue service for assistance. Thanks to the quick action of the Marine Department a ship was on its way to assist the yacht by 2250, reaching her by 0220 the following morning. The net remained open until 0430 monitoring the marine frequencies, passing information to the yacht, and generally trying to keep up the spirits of the yacht's crew. Thirty-six hours later the Phat Duck was towed clear of the reef with minor damage and no injuries to the crew.

During the latter incident many stations from all over the world either provided relay or stood by in case they could render assistance. Unfortunately Joyce Stone, H44KR has now moved on and is currently heading for Cairns, Australia. Her regular informative maritime mobile net will be sorely missed by yachtsmen transiting the Solomons.

THESE ARE BUT TWO INCIDENTS. THERE HAVE BEEN MANY, MANY OTHERS, AND THEY ALL GO TO MAKE AMATEUR RADIO MORE THAN JUST A HOBBY FOR THE FEW SOLOMON ISLAND AMATEURS.

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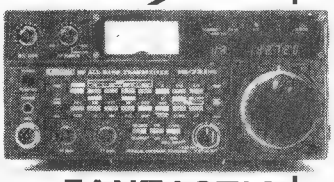

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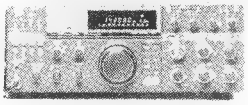

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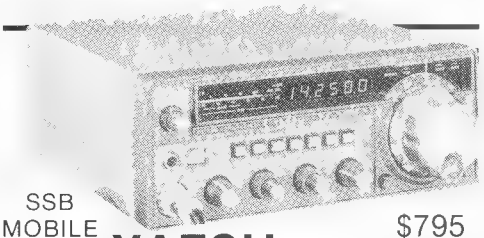

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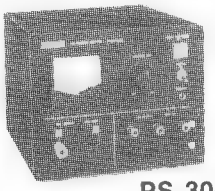

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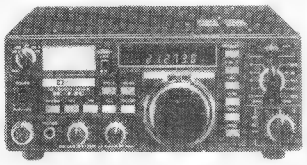

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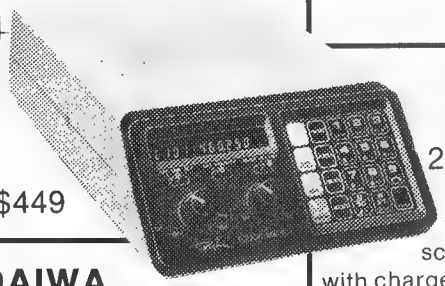

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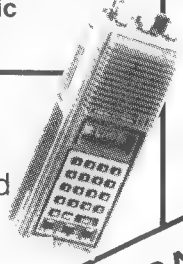

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EDUCATION NOTES

Brenda Edmonds VK3KT
Federal Education Officer
56 Baden Powell Drive, Frankston 3199

In any discussion on classes or training programs, there is one question that is always asked — "Are we training people to be amateurs or to pass exams?" There is not always agreement on the answer. Obviously each instructor has to decide on his/her own answer to this question at some stage of the course. Equally obvious, since the exam must be passed for the candidate to receive a licence, the question can never be fully resolved.

Most would agree that possession of that vital piece of paper does not produce an instant new amateur according to our full understanding of the term, and most of us have at some stage mentally or openly criticised the language or procedure of a new operator.

How many of us, though, are prepared to give a little time or effort to encourage or assist the new operator? They all realise that there is a lot to learn which is not on the exam paper, but many are a bit diffident about asking for help, or do not know who to ask.

For many students, the classes are their first contact with active amateur operators. Their future operating habits will depend to a large extent on their early experiences.

Some clubs see the classes they run as a good source of funds, or prestige, or new members, but are prepared to leave the class work to a small group. They do not always realise that there are many ways they can assist the students — or the instructors.

For those who are concerned about the quality of the new amateurs being added to our ranks, here are a few ideas.

1. Make the students welcome at club meetings or activities, and keep them informed about club functions. Be prepared to answer questions, and to talk to them at their own level of knowledge. Have some speakers at meetings who can be understood by the students, and keep the jargon to a minimum when talking to the newcomers.

2. Help the students become aware of what is available in the way of equipment and accessories. This can be done in several ways — by arranging trade displays, by collecting a range of sets in one place to work on the same antenna system, or by inviting the students into individual shacks. For many, this may be their only experience of operating procedures before they get their licences, and will be the only way they can compare sets before they decide what to buy for themselves.

3. Help the student become a listener. This is especially useful for students having trouble with the Morse and needing a lot of practice. They may need help to get up an effective antenna, or even a short loan of some HF receiving equipment. Being able to receive, even on only one band, will make much of the theory more relevant.

These are only a few ideas. They are not restricted to club members. In some areas, classes are being run by schools or TAFE colleges, with practically no amateur input except by the instructors. These classes in particular, need to be made aware that there are active amateurs willing to help them into the hobby.

Best wishes to all those sitting for the November exams. Sample papers are now available from me or from the Executive Office.

73

Brenda VK3KT

AR

"DON'T GO IT ALONE — SEEK ADVICE"

Seek early advice with any interference problem which involves third parties. **DON'T** leave it until the situation has got out of hand!

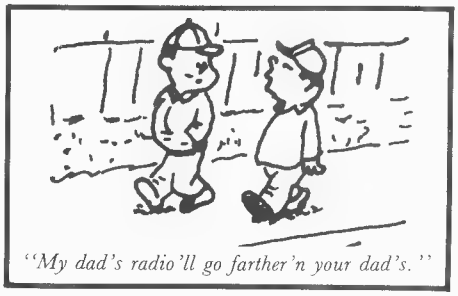
In today's world of highly complex communications and electronics, amateur radio operators are under growing pressure in respect of "interference" to and from their stations . . . "The gadget world is closing in!"

In these days of modern-design amateur transmitting equipment, the incidence of interference, which is shown to be directly attributable to faulty amateur station equipment, is less than 1 per cent. Most interference problems are directly due to the poor immunity factor of consumer products.

Because of this growing threat to amateur radio as a whole, the Wireless Institute of Australia makes its EMC Advisory Service available to all Australian amateurs.

The National EMC Advisory Service is available to assist with advice on all types of interference problems . . . When requesting assistance, please provide as much detail as possible.

Tony VK3QQ.



"My dad's radio'll go farther'n your dad's."

from: "cq-DL" 3/82

AOCP Examinations — 1925 Style

Recently, while researching material of historical value for VK5 division, Brian VK5CA happened upon this copy of an examination paper published in SA WIRELESS — August 19, 1925.

How would the amateurs of today go —??

EXAMINATION FOR AMATEUR OPERATOR'S PROFICIENCY CERTIFICATE

Theory.

Time Allowed — Two Hours

Note — The compulsory questions (1 to 5), and two of the optional questions must be answered.

COMPULSORY QUESTIONS

1. Draw a diagram of a 10 watt (2 valves) transmitter adapted for C.W., buzzer modulated C.W., and telephony. Show source of primary power and apparatus for obtaining requisite H.T. supply, and include in the circuit aerial ammeter, plate milliammeter, and filament voltmeter ..... 25 marks.

2. Draw a diagram of a 3 valve receiver capable of being used for reception of C.W. signals .....15 marks.

3. Explain in detail the construction and functions of a high frequency and a low frequency choke .....15 marks.

4. Define briefly the following:-
   (a) Radio frequency currents.
   (b) Electromagnet.
   (c) Grid leak.
   (d) Wavemeter.
   (e) Variometer ..... 10 marks.

5. State what you know of the following:-
   (a) The chemical action which takes place in an accumulator when discharging.
   (b) What makes an accumulator gas on completion of charge.
   (c) How to get rid of slight sulphating in an accumulator ..... 15 marks.

OPTIONAL QUESTIONS

6. What is meant by the choke control, method of modulation? .....10 marks.

7. What effect would the application of A.C. to the plate of a transmitting valve have, and why? ..... 10 marks.

8. What is meant by direct and indirect coupling, in so far as receivers are concerned? Illustrate your answer .....10 marks.

9. Write what you know of the synchronous rectifier .....10 marks.

Total Marks 100
Pass Marks 75

Traffic Routine

Time Allowed — One Hour.

COMPULSORY QUESTIONS

1. (a) Illustrate in detail a test transmission with an experimenter in another State.
   (b) Show a log entry of the test ..... 20 marks.

2. Give the meaning of the followng signals·
QRP
QRB.
QSY.
QST.
QSL ..... 20 marks.

3. What do the following indicate?
— — . — —
. — —
— . — .
. — .
— . — ..... 20 marks.

4. State what you know of the rules made by the Department in order to avoid interference with other stations ..... 20 marks

5. What is the international distress signal, and the maritime warning signal, and state what action you would take if you heard either of these signals whilst engaged in making a test ..... 20 marks

Total Marks 100
Pass Marks ..... 75 AR

NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ

NATIONAL EMC CO-ORDINATOR
38 Wattle Drive, Watsonia 3087

Hans Ruckert, VK2AOU, has interpreted the findings of DL1BU which should be good food for thought. For any amateur that owns a transmitter capable of emanating a signal regardless of power output.

Electromagnetic Energy near our Station

by Hans Ruckert, VK2AOU.

Radio amateurs are usually only interested in the signal strength which their station equipment will produce at the distant receiver.

When a complaint of local interference is reported, we begin to realise that not all the EM energy produced by our station actually arrives at the distant receiver.

If it was possible to ensure that all the EM energy we produce would arrive at the distant receiver, then we would not only improve our communications capability, but we would significantly reduce many of the co-location problems.

Much of the EM energy generated by our station transmitters remains in and around the station, is absorbed by, and impinged on numerous natural and man-made substances.

For those of us fortunate enough to live on an isolated "cattle station" or an isolated "Pacific island," local field strength is of little consequence: However, most amateurs have to contend with a moderate suburban block, where many items of "hardware" will be subjected to our local EM energy field.

Providing these items of "hardware" will be subjected to our local EM energy field.

Providing these items of "hardware" have good immunity factors (good selectivity), then again, our local EM energy field will be of little consequence.

Unfortunately there are quite a large number of items to be found around the average home which do not have good immunity factors. The most common problem is home entertainment products.

There are however, many other unsuspected items which can fall foul of our EM energy field; re-radiating a reproduction of our signal on other frequencies by non-linear action.

Some of these items include, rusty, corroded or ill fitting metal work, electrical wiring, plumbing, to name but a few.

These and other experiences prompted DL1BU to conduct some very interesting local field strength measurements in and around an average amateur station. The listed values in V/m can be halved if one uses a quarter of the mentioned transmitter carrier output power.

(a) **Triband Groundplane antenna** mounted on a house roof, radials installed under the roof. The ceiling is of concrete and wood chip mixture. The transmitter is operating on 14MHz, at 400 watts pep output. At a distance of 20 metres the field strength was 15 V/m. At 40 metres distance the field was 6 V/m. Inside the house under the mast, the field was 10 V/m.

(b) **Inverted Vee Dipole antenna** 16 metres above ground at the centre feed point. The ends 10 metres above ground. The transmitter operating on 7MHz at 400 watts. The field strength at ground level under the centre point was 20 V/m, and under each end 30 V/m. At a distance of 20 metres and at an angle of 60° to the plane the field was 6 V/m.

(c) **As (b)** but 29 metres above ground at the centre feed point. The transmitter operating on 3.5MHz at 400 watts. The field strength under the centre point was 30 V/m. Under one end 20 V/m, and the other end 36 V/m.

(d) **As (c)** with the transmitter operating on 1.8MHz at 10 watts. The field strength under the centre point was 1 V/m, and at the ends 30 V/m.

(e) **Three Element Triband Yagi antenna** mounted 10 metres above a concrete roof. The transmitter operating on 14 MHz at 400 watts. The field strength at a distance of 40 metres in the main radiation direction was 2 V/m. At 20 metres the field was 4 V/m. Under the yagi, on the concrete roof the field was 18 V/m. Beneath the steel reinforced concrete roof the field was down to 1 V/m.

(f) **A Ground Plane antenna for 7 MHz** at ground level with 10 radials buried 5 cm deep. Power 400 watts. The field strength at 1.5 metres above ground (E-field) at a distance of 2 metres was 72 V/m, at 4 metres was 40 V/m, at 8 metres was 30 V/m, and at 16 metres was 18 V/m.

(g) **A 200 metre Long Wire antenna** 3 metres above ground terminated with 600 ohms. The transmitter operating on 3.5 MHz at 400 watts. The field strength measured at 1.5 metres above ground. Along the length of the antenna the field varies from 90 V/m to 50 V/m, and finally to 3 V/m outside the far end.

These fieldstrength values of various antenna systems give us some idea of how much EM energy we can expect near our station and how high the immunity factor domestic home entertainment and consumer products should be in order to provide protection against interference.

The West German DIN Standard 45.305 part 302 (draft from September, 1980; last date for objections 31st January, 1981; developed by all parties concerned, and used by some manufacturers for the past seven years) provides for an immunity test of TV and BC receivers to obtain approval for sale.

For the immunity tests, the receiver is placed in an EM field of 3 V/m over the frequency range 150 kHz to 150 MHz. The licencing authority requested legislation for a 10 V/m test: However, after negotiations between all parties, including the manufacturers, agreement was reached for a figure of 3V/m.

The test equipment required for completing these immunity measurements is called the Crawford, Jacky or TEM cells. These test cells are the internationally acceptable method of testing electronic equipment for immunity and susceptibility to unwanted electromagnetic energy.

The West German equipment manufacturers have learned from the "Jacky" test cell how to design domestic, home entertainment, and consumer products so that they have a good immunity factor, and still retain good economy for their products.

Many of the West German manufacturers demonstrate and illustrate the ability of their products to operate in close proximity to high power radio frequency transmitters, without producing interference, by connecting a working TV receiver to the same antenna as an operating radio frequency transmitter. Also, by advertising the ability of their products to operate without interference in a hostile EM energy field, the level of which is greatly in excess of government legislation standards and regulations.

If you are still not convinced of the need for government legislation covering standards and regulations for immunity and susceptibility of domestic, home entertainment and consumer products in Australia, or if you believe that the cost to manufacturers would be prohibitive, then we would suggest that you study the North American and European scenes.

Should you still not be convinced, may we suggest that you picture yourself in the following situation: "Your neighbour has filed a complaint against you, with the DOC, in respect of interference to his newly acquired video recorder. The DOC inspectors investigate the situation and come down in your favour; telling your neighbour that his "pride and joy" is at fault and he should contact his equipment manufacturer. The manufacturer either does not wish to know the problem or claims that his equipment is working correctly and is meeting specifications . . . Your neighbour now has little choice but to take legal action against you for causing a public nuisance, breach of the peace, or what-ever. Or, perhaps just throws bricks through your windows . . .

Tony VK3QQ

A most useful tool in understanding and dealing with all types of RFI problems is the "New Interference Handbook" from the USA. This book is very moderately priced and is excellent value for money — a most useful reference book for any shack. Available from all Divisions and MAGPUBS. **AR**

EMC

(**E**lectro **M**agnetic **C**ompatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO
VK3QQ,
Federal EMC Co-ordinator, QTHR.

INTRUDER WATCH

Bill Martin, VK2EBM
FEDERAL INTRUDER WATCH
CO-ORDINATOR
33 Somerville Road, Hornsby Heights 2077

FCC LODGES PROTEST WITH USSR

A recent communication from the IARU Region 2 Director of the Intruder Watch informs us that the USA Federal Communications Commission has lodged protests with the USSR concerning Intruder stations using Radioteletype on the following frequencies: 14.115 MHz; 14.141 MHz; 14.171 MHz.

Also a protest has been sent to the International Telecommunications Union (ITU) regarding the Intruder (also using Radioteletype) which can be heard on 14.349 MHz, and which emanates from the North Korean News Service.

This sort of action is a 'plus' as far as the Intruder Watch is concerned, and is precisely why Intruder Watch is in existence.

These protests are a direct result of the actions of interested amateurs who are prepared to send in the occasional report concerning the Intruders they hear on the amateur bands in the course of their ordinary on-air activities.

The Intruder Watch Co-ordinators are merely an extension of the average amateur, and we must all work together to police the amateur bands. *Intruders on the amateur bands are ON THE INCREASE.*

WHY?

Because most of us are sitting back, presuming that someone else is reporting the Intruders that WE hear, and we are complacent in that knowledge.

Forget it. YOU MUST report the Intruder. Sure, someone else may also report him, but the fact is that we need many reports. IDEALLY, WE WANT EVERYONE TO REPORT INTRUDERS. This will never be the case, of course, but let us at least try to swing the percentage of success a little our way. As it is, the Intruders have all the advantages. They don't have to listen on the frequency before transmitting; they don't have to stay within their band-limits; they don't have to watch their power-output. They, in other words, get the first shot. Now we must retaliate. The way we do this is to shoot back. HOW? Log their transmissions, and send a report to your Divisional Intruder Watch Co-ordinator.

Don't forget, these Intruders you hear on the amateur bands don't have a pipeline to Australia. All the other Societies around the world have their Intruder Watch, who are also doing their best to get rid of the Intruders from the bands. We MUST assist the other regions in their endeavours. Don't let us reap the benefit of any good work they may do.

DON'T KNOW WHERE TO START?

Try the 40 metre band, every evening. Look for AM broadcast stations, of which there are many. Try 7.025, 7.050, 7.095 MHz, etc.

And that's not all. Try 21.032 MHz through the daylight hours (local), and listen to a Russian Merchant Navy radioteletype station, who takes up a lot of time on OUR bands. He'll identify in CW, and you will hear his call-sign "UMS".

Tell us you heard him.

Have a listen for Intruders . . . you'll soon get the hang of it.

Any advice or information can be obtained from your Divsiional IW Co-ordinator, or from the Federal IW Co-ordinator.

If a tiny place like Trinidad and Tobago (9Y) can muster up five active stations to monitor Intruders, surely we here in Australia can at least give them a hand, and some encouragement.

Remember, we are HELPING OURSELVES.

Please report ALL intruders.

Amateur Bands for Amateurs. AR

AUSTRALIAN LADIES AMATEUR ASSOCIATION

ALARA

Margaret Loft, VK3DML
28 Lawrence Street, Castlemaine 3450

Hello to all again. November is our big month — please remember the ALARA CONTEST on November 13th from 0001 to 2359 UTC. Suggested frequencies as per the contest rules in October AR page 40. The contest is open to all so please join in and make this even more successful than last year. So we look forward to talking to all OM's, YL's and also hearing from the SWL's. Look for the club call signs VK2DYL — Geraldine VK2NQI and VK3DYF — Margaret VK3DML operating the calls for the contest date. These are bonus stations worth double points.

DX VISITORS

Some of the ALARA girls have had the pleasure of meeting one of our DX members, Bobby VE7CBK and OM Archie who are in Australia for the Commonwealth Games and took the opportunity to meet some of the YL's. Heather VK2HD, Helene VK7HD, Gill VK6YL, and Mavis VK3KS were hostesses to them. On Tuesday 21st September, Mavis and Ivor invited some of us to meet Bobby and Archie, Alma ZL2AWP was also in Melbourne so a three-country luncheon was thoroughly enjoyed. Thank you to Mavis and Ivor for your kind hospitality. Jessie VK3VAN and Gordon VK3BGB and Mavis VK3BIR also met Bobby.

5W1-YL

Girls, if you are still looking for a YL on 5W1, Jessie WA60ET and Pete Billon K6JG and Larry W6ANB have announced they intend to operate from 5W1 in the CQWW WPX CW Contest on 27th and 28th November, 1982. After the contest Jessie and Pete hope to visit Australia and New Zealand, and meet some of the YL's. Jessie is not a member of ALARA but is a past president of YLRL and holds YLISSB no. 46 and is a member of WARO.

I had a visit from Clem VK7NBC a few days ago whilst he was in Castlemaine staying with relatives. We had not previously met on air but look forward to talking to you soon Clem. Also had a visit from Valda VK3DVT and her sister Pat, and did enjoy the visits.

On Sunday night I met Brenda VK2PKI on 80 Metres. A new YL, Brenda is still a student and a keen contester, so hope to talk to you again on the contest and also on the ALARA nets, Brenda, and good luck in your further studies.

EXAMS!!

Have not heard of any new callsigns from the last exam but do hope some were successful. Please let me know so we can update our lists.

I had a note from Norm VK3VWO to tell us his XYL Carmel is studying for her novice ticket and asking for a little encouragement. We would be very pleased to do this for any other YL. The aim of ALARA is to foster and encourage YL involvement in amateur radio, so please let me know if your YL is studying and we will arrange for someone to call or phone and offer any assistance. It is well worth the time to add another call to the bands.

Thank you to those who have notified us of YL's with call signs and hope to hear from more of you.

ALARA teaspoons and badges are available from Valda VK3DVT C/- P.O. Box 4, Brighton 3186, also information sheets for finding out about joining.

Until next month, good luck to all taking part in the contest and may you work that elusive country you have been chasing.

33/73/88 to all, Margaret. AR

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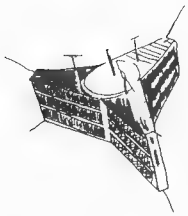


AMSAT AUSTRALIA

Bob Arnold, VK3ZBB,
41 Grammar Street, Strathmore, 3041.

NATIONAL CO-ORDINATOR
Chas Robinson VK3ACR.
CORRESPONDENTS
VK3YQX, VK4TL.
ACKNOWLEDGEMENTS
AMSAT Satellite Report.
ARRL RTTY News Bulletins.
AMSAT-UK per G3AAJ.
INFORMATION NETS

AMSAT AUSTRALIA
Control VK3ACR.
1000 UTC Sunday and Wednesday.
3.680 MHz Winter
7.064 MHz Summer (From 31 October).

AMSAT PACIFIC
Control JA1ANG
1100 UTC Sunday.
14.305 MHz.

AMSAT S-W PACIFIC
Control W6CG.
2200 UTC Saturday.
28.878 MHz.

Basic Orbital Data can be obtained through the AMSAT-AUSTRALIA nets by both participants and listeners.

MODE "J" CLUB

Congratulations to Carl VK2YSX and Ross VK2ZRU on their election as members of the Mode "J" Club. Their numbers are respectively 238 and 240.

SATELLITE DX RECORD

In the September 1982 edition of "Amateur Radio" I included a reprint of a report from "Amsat Satellite Report" No 37 which suggested that a recent QSO via RS-8 between VK4TL and WH6AMX was an all time satellite DX record and a first between VK and WH6.

John VK4TL has now written to me to clarify the report. John's first contact with the North Pacific Area was on 27th January, 1978 with WA8VDJ/KH6 in Kure through Oscar 7 Mode B; this was followed on 12th March, 1978 by a QSO with KH6OS in Honolulu.

A QSO was also made with KH6JHR in Honolulu on 30th January but no QSL card was received; John was 'heard only' by KH6OS on Mode A on 23rd February, 1978 but no QSO resulted.

My calculations indicate that the distance from John's QTH in Cairns to Kure is 6344km and to Honolulu 7470km. John has also worked UA0LBU in Vladivostok on Mode B, a distance of 6820km and he lists other countries worked by satellite:-

ZL2, JA, JR6 (Okinawa), VS6, P29, KC6, HL9, DU6, KH6, KH6 (Kure), KG6, 9M2, RA0, H44, YB0, FK8.

It is now clear that the contact between VK4TL and WH6AMK on 3rd July, 1982 was neither a first nor a record but nevertheless it was most creditable and both operators deserve our congratulations.

Unfortunately stations in VK3 are precluded by distance from working some of the above mentioned DX but as a consolation we do have the opportunity to work all ZL call areas as well as the elusive Antarctic stations.

I have also worked into ZK1 and for the record my personal best DX is JR6AE (Okinawa) at 7334km and VS6HI at 7413km. Can I persuade past and present satellite operators to let me have details of their logs so that achievements can be recorded as a part of the history of our Institute.

PHASE IIIB

On the 10th September at 013203 UTC ARIANE L5 Rocket was launched from Kourou, French Guiana by the European Space Agency.

The vehicle carried a payload of satellites MARECS -B and SIRIO-II, no amateur satellites were on board.

After 550 seconds from launch it became apparent that the vehicle was not following it's predicted flight path and the tracking station in Brazil reported there had been a failure of a turbo pump in the third stage rocket.

The rocket and it's load crashed into the Atlantic Ocean. This catastrophy has caused some concern in amateur circles as the AMSAT Phase IIIB Satellite is due to be launched on ARIANE L7. (It will be recalled that Phase IIIA was lost on 23rd May, 1980 when ARIANE L2 was destroyed shortly after launch).

Information to hand at the end of September indicates that a delay of only two months is anticipated, therefore a revised launch date in April 1983 can be assumed.

AMSAT Oscar 8

AO-8 is operating according to schedule.

For a trial period the Westlink Report will be transmitted through the telemetry beacon and reports on its reception are requested by AMSAT.

The Westlink Report is produced on the West Coast of the USA and is a general survey of satellite activity.

DIGITAL PACKAGE

For some time discussions have been proceeding on the possibilities of launching a Low Orbit Digital Package for the use of experimenters in this field.

It is now hoped that a potential launch may exist on one of the SSI rockets which are being developed by private enterprise in the USA.

VISITORS

It was a pleasure to have an eyeball with Ray Naughton VK3ATN and to see him looking so fit after his most serious antenna accident. It would appear that Ray has as many steel pins as bones and one can imagine him bubbling inside if he gets too near that huge EME dish in the middle of his antenna farm.

As well as pursuing his business of manufacturing antennas for amateurs and professionals Ray has some quite sophisticated plans for community TV Transponders in small country centres, an attractive low cost self help scheme.

Ray is also active in the educational sphere and is trying to arrange residential courses of two or three days duration for students in physics and electronics. It is hoped that the courses will be run in conjunction with the local high school, (further particulars from Ray QTHR).

I used Ray's "ATN" 70cm antennas, as advertised in 'AR', for Mode 'B' and Mode 'J' satellite operations and was most disappointed that time precluded demonstrations via one of our satellites.

UOSAT OSCAR-9

During the afternoon of 25th September listeners to UO-9, including VK3ACR, VK5AGR and VK3ZBB, were thrilled to hear the 145.825 MHz Beacon of the satellite running 300 baud ASCII after several months of continuous tone.

The beacon on 435.025 MHz was also absent and this indicated that the de-sense problem with both command receivers had been overcome.

We now await with interest the further development of the numerous facilities, including TV, which are aboard the spacecraft.

Congratulations must be extended to the small team of enthusiastic helpers who made this breakthrough possible.

AMSAT OSCAR-7

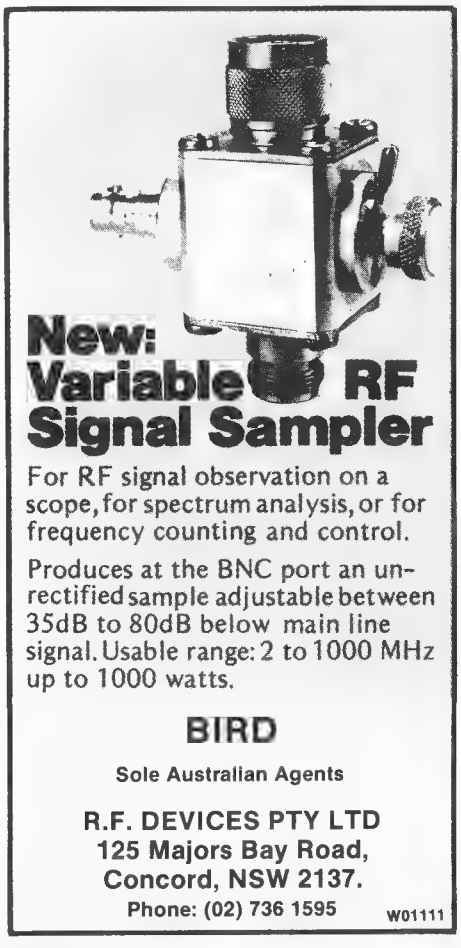
Following reports that the Beacon on 145.972 MHz had been heard, a number of stations have been listening for further activity. Unfortunately no signals have come through so it must be assumed that the Beacon is very intermittent or that the signals came from another source.

RS 3 to 8 SERIES

These satellites are operating satisfactorily according to their standard schedule.

Postscript on PHASE III

As we go to press we hear that there is a possibility that the launch of Ariane Rocket L6 may be abandoned and its launch date of early January 1983 be filled by L7 which is scheduled to carry the AMSAT PHASE IIIB satellite.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WICEN NEWS

Ron Henderson, VK1RH
FEDERAL WICEN CO-ORDINATOR
171 Kingsford Smith Drive, Melba, ACT 2615

NDO EXERCISE

NDO conducted their annual exercise COMCOORD 82 over the period 14 to 16 Sep 82. The exercise took the form of a command post exercise (CPX) for the National Emergency Operations Centre (NEOC) in Canberra and the scenario involved a cyclone situation moving down the Northern Queensland coastline. NDO wrote into the exercise a test of WICEN communications to Queensland and at fairly short notice VK1WI was activated from the QTH of VK1FT to make contact with the following:
VK4WI Brisbane, VK4AQ Brisbane, VK4QA Brisbane, VK4YG Cairns, VK4IQ Townsville, VK4ALD Rockhampton, VK4UX Gatton, VK4ACU Tamborine.

Signals on 7.050 MHz were very good to Brisbane, Gatton and Tamborine, whilst fair signals were received from Rockhampton, Townsville and Cairns. VK4WI relayed to Cairns and Townsville to improve communications. In Canberra VK1DG manned a repeater 6900 VHF link at the VK1FT location and VK1ZAH was located in the NDO operations centre on the sixth floor of Northbourne House.

The net was only active from 1800 to 1900 local but this was adequate to demonstrate to NDO WICEN's capabilities if called upon in an emergency. Thanks are due to all operators who were active on the evening. Co-ordinators agreed that short exercises of this nature are good value to test and demonstrate capabilities.

ARRL SET

By the time you read this WICEN will have been involved in its first SET, conducted by the ARRL over the weekend 16/17 Oct 82. The SET or Simulated Emergency Test is conducted annually in the USA to test and exercise their National Traffic Systems (NTS), Amateur Radio Emergency Service (ARES) and Radio Amateurs Civil Emergency Service (RACES). As I noted in this column in July 81 ARES and RACES correspond broadly to WICEN and NTS to Australian TPTNs. Consequently Australian WICEN involvement in the SET will call for co-ordination of WICEN and TPTNs, particularly at the national "gateway", where incoming traffic will have to be routed into the official disaster agency network WICEN, or the public personal communications network TPTN. This year our involvement is low-key, conducted from Sydney by NSW WICEN and based upon messages describing the Australian disaster control agencies' roles and responsibilities.

ABBREVIATED PROCEDURE

Abbreviated procedure has two aspects, generally a shortening of the rather lengthy formal message procedure for use when communication conditions are good, and secondly the use of abbreviated callsigns. When conditions are good, particularly on VHF nets, the use of just the sender's callsign to replace the full sequence — ROGER — OVER — VK1ZAH THIS IS VK1RH, is to be encouraged, as are other abbreviated practices which do not confuse operators on the net. As an aside, almost all amateur networks are too waffly and WICEN is not excluded from this observation.

HOWEVER the use of abbreviated callsigns, dropping the VK or VK1 prefix, is not acceptable, unless DOC have specifically authorized such actions, so let's keep within the Handbook Regulations. Incidentally the cross patching either electrically or accoustically of VHF to HF often violates licence conditions so please keep within the Regulations during training and exercises.

JOINT MEMBERSHIP

Many WICEN operators, especially those in small communities, may belong to multiple organizations, and this is a good thing provided there is no conflict of interest. If you report on a WICEN call-out and it goes slow or is slow to develop, do not change your WICEN hard hat for SES overalls or a police badge and change allegiance mid-disaster. This only makes it difficult for your co-ordinators who have counted on you as a worker, even though you are waiting in the wings, and moreover it is downright discourteous.

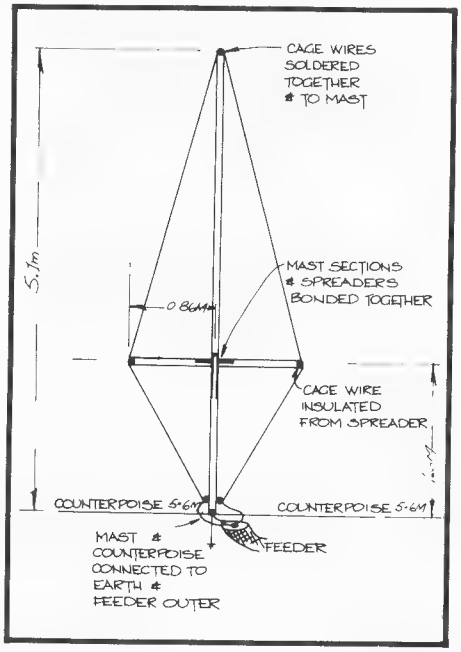
Our Federal policy defines the four levels of involvement — choose yours and concentrate your efforts in that field. **AR**

* * *

"OOPs"

Unfortunately there was an omission of the dimensions on a diagram in the article "Multiband Exponential Antenna" published September AR page 26.

Here is the diagram again with the dimensions.



* * *

Most men would agree there are three things in life that are very difficult to do. One is to climb a wall that is leaning towards you; another is to kiss a girl who is leaning away from you and another is to speak to large audiences without being nervous. Personally, I've had no success with walls leaning towards me; I've made only a little progress in overcoming my nervousness with speaking to large audiences and the third is none of your business.—From "The Clubman" Aug '82

AR

Radio Amateur Old Timers Club

John Tutton, VK3ZC
31 Denham Street, Hawthorn 3122

Favoured by perhaps the best band conditions yet, the VK/ZL QSO party on 9th August attracted the best support of the three held to date. Scoring logs submitted totalled 33, 21 from VK and 12 from ZL (plus two check logs), and from an inspection of these, it appears that a total of 47 members of the combined clubs took part.

Not all entrants indicated the mode used, but, by reference to other logs, it is hoped that all scores are shown in their correct classifications.

Call	QSOs	Mult.	Total
CW			
VK3RJ	*21*	*9*	*945*
VK3ZC	*21*	*8*	*840*
VK4CJ	*21*	*8*	*840*
VK3LC	*15*	*7*	*525*
VK3YW	*7*	*3*	*105*
ZL2AB	*20*	*10*	*1000*
ZL3AV	*18*	*8*	*720*
SSB			
VK7AL	*24*	*8*	*960*
VK3GY	*16*	*8*	*640*
VK7BJ	*16*	*8*	*640*
VK4OX	*17*	*6*	*510*
VK5KV	*16*	*6*	*480*
VK3HE	*14*	*6*	*420*
VK2HQ	*12*	*5*	*300*
VK7JU	*12*	*4*	*240*
VK3WY	*7*	*3*	*105*
ZL1JQ	*20*	*7*	*700*
ZL1BGJ	*16*	*8*	*640*
ZL1BWU	*13*	*8*	*520*
ZL2BD	*16*	*5*	*400*
ZL2WL	*9*	*6*	*270*
ZL1ALW	*8*	*3*	*120*
SSB/CW			
VK3KS	*35*	*10*	*1750*
VK3XB	*35*	*10*	*1750*
VK3JA	*28*	*10*	*1400*
VK2AKE	*27*	*9*	*1215*
VK3VF	*29*	*8*	*1160*
VK7RY	*21*	*8*	*840*
VK3XF	*6*	*2*	*60*
ZL3BJ	*24*	*10*	*1200*
ZL4BR	*23*	*8*	*9*
ZL2US	*20*	*8*	*800*
ZL2KM	*18*	*7*	*630*

COMMENTS

"John Stewart W6GTI at 7.3 either stays up very late or gets up very early — wish more locals would participate" — VK2AKE.

"Not a big log — enjoyed it very much" — VK7RY

"The easy going atmosphere and friendliness of all left a very nice feeling" — VK7AL.

Comments like these, and others, are very much appreciated.

The next party will be held on 20 metres at end February/early March. Notification later through these columns and on OTC net **AR**

* * *

A customer with one arm winced as the barber nicked him for about the third time, but the man with the razor chatted on unnoticing. "Haven't you been in here before?" he babbled. "No," said the man in the chair wryly, "I lost my arm in a sawmill accident."

—From "The Clubman" Aug 82

AR

Commonwealth Contest 1982

John Tutton, VK3ZC
31 Denham Street, Hawthorn 3122

In the summary of the results of last year's contest, a table of leading scores was shown in which there was a build-up in line with the sunspot cycle to 1980, and then a decline. Sunspots or no sunspots, activity is the key to big scores and a successful contest.

1982 was notable for a number of reasons; total entry at 132 was the highest since 1958 when there were 143; greatest VK entry ever at 54, exceeding the Gs for the first time; highest all time winning score (VE7CC) and VK score (VK4XA).

Conditions generally were pretty fair, but on 15 and 10 seemed to vary considerably between the various VK states.

Russ Coleston VK4XA, a BERU man from way back as VK3XK, VK9XK and VK3AXK is to be congratulated on again being in 5th place overall and leader of the Australian contingent for the third year in a row, and top for four of the last five years.

In the receiving section Eric Trebilcock BCRS195 missed out on top spot by only 5 points.

THE LEADERS WERE:

1. VE7CC	7588	6. ZL2BR	5562
2. VE6OU	7434	7. VK9NS	5524
3. VE3BVD	6772	8. G3FXB	5449
4. VE5RA	6311	9. 9H1CH	5328
5. VK4XA	5798	10. G3MXJ	5265

RECEIVING SECTION
2 Eric Trebilcock BCRS195 2922

AUSTRALIAN SCORES

5. VK4XA	5798	69. VK6AJ	1978
7. VK9NS	5524	70. VK7RY	1975
19. VK3XB	4590	73. VK3VF	1700
20. VK3MR	4583	74. VK3YK	1678
21. VK2BPN	4265	77. VK3XU	1595
23. VK7BC	4165	78. VK2II	1580
26. VK1CC	3929	80. VK2DBL	1480
32. VK2GW	3720	83. VK3XX	1350
38. VK3ZC	3335	87. VK5BN	1205
39. VK3AEW	3305	88. VK4SF	1195
40. VK2AQF	3245	93. VK7GB	1130
41. VK3RJ	3240	94. VK3FC	1110
42. VK3BKU	3203	97. VK3CG	1105
42. VK6RU	3203	100. VK5FG	1035
44. VK4UR	3185	104. VK3APN	942
46. VK3CM	3080	105. VK2ZC	940
47. VK3KF	3040	109. VK2SU	825
49. VK6FS	2695	110. VK5HO	795
50. VK7CH	2595	111. VK6HD	790
57. VK5GZ	2250	112. VK3KS	760
59. VK1UD	2225	118. VK3BLN	635
60. VK2DID	2220	125. VK5KL	440
61. VK5UM	2155	126. VK2BDU	390
62. VK5RG	2150	127. VK2GT	375
64. VK6RZ	2070	128. VK3SV	360
66. VK3BDH	2045	130. VK3CT	250
67. VK3JF	2020	132. VK7ZO	225

Check logs VK2EL VK4AK

OTHER PACIFIC AREA RESULTS:

6. ZL2BR	5562	75. ZL3AGI	1655
13. ZL2RY	4900	107. ZL1AZE	919
25. T30AT	3935	129. ZL1BLJ	320
35. ZL1AIZ	3655		

SINGLE BAND ENTRIES AMONG THE ABOVE WERE:

3.5 MHz VK6HD, VK7ZO
7. MHz VK3APN Overseas leader
14 MHz VK6AJ Overseas leader, VK4SF
21 MHz VK3BLN

The four man team event between VK areas resulted again in a win for Victoria. A table of results on this basis over the past three years is shown, with comparisons with the UK, VO and VE7 the only other Commonwealth areas as defined in the rules from which over four logs were received.

	1982	1981	1980
VK3	15813	10073	12216
VK2	13450	9407	11400
VK7	9865	7098	8863
VK6	9746	—	4293
VK5	7760	3250	4013
VK4	—	—	7248
G	20384	17593	22533
VE7	14187	—	—
VO	6793	—	—

AUSTRALIAN AWARDS

The Gold Medallion for the leading VK entrant — Russ Coleston VK4XA

The Silver Medallions for the leading State team — Ivor Stafford VK3XB, Snow Campbell VK3MR, John Tutton VK3ZC and Andy Domjan VK3AEW.

The Bronze Medallion for the middle placed VK entrant John Heine VK3JF.

HOW THE LEADERS MADE THEIR SCORES:

QSOs/Bonus areas per band 80 to 10 (claimed)

VE7CC	**24/24**	**103/44**	**204/62**	**217/55**	**83/43**
VE6OU	**18/12**	**80/42**	**240/61**	**272/58**	**108/40**
VE3BVD	**30/14**	**100/39**	**180/47**	**243/48**	**131/34**
G3FXB	**13/11**	**48/33**	**108/65**	**91/55**	**56/36**
VK4XA	**26/18**	**44/28**	**145/56**	**133/53**	**52/41**
VK9NS	**29/28**	**55/29**	**152/54**	**164/49**	**42/20**
VK3XB	**6/6**	**21/17**	**128/46**	**129/53**	**31/29**

RSGB REMARKS

"80 poor, 40 not too bad, 20 and 15 excellent, 10 patchy". This sums up the reactions of most entrants to conditions during the 1982 Commonwealth Contest. The HF bands provided very good openings and for many 21MHz was open for the entire 24h period. However, the lower frequency bands and 3.5MHz in particular were rather poor, with static levels, especially in North America, making copy of weak signals very difficult.

The contest was dominated by Canadian entrants this year and they took the leading four overall placings. Top honours went to a previous overall winner, Lee Sawkins, VE7CC, with last year's winner, John Sluymer, VE6OU, pushed into second place. Top positions were closely fought, the final placings being determined very much by accuracy of logs and attention to bonus points, rather than by sheer number of contacts. It is pleasing to see some increase in activity from VE, and it is hoped that efforts at increased publicity are bearing fruit. The HF Contests Committee is grateful for the help of CQ magazine in this respect, which reproduced the rules in full, but it is unfortunate that despite a considerable membership in Canada, ARRL published only a passing reference in QST.

Russ Coleston, VK4XA, again led the Oceanic stations, which were well represented thanks largely to the excellent publicly organized by John Tutton, VK3ZC. Jim Smith, VK9NS, provided many welcome bonus points giving many stations, particularly in Europe, their first contact with Norfolk Island on 7MHz. VK9NM on Lord Howe, and VK9XM on Christmas Island provided additional DX spice during the contest.

It is not until eighth overall position that the first European call appears. Al Slater, G3FXB, maintained his apparently relentless hold on the Colonel Thomas Rose Bowl for the leading UK entrant. Attention to log accuracy, a comprehensive selection of competitive antennas, and the benefit of years of propagation knowledge which produces just those few extra bonus contacts seemed to be the keys to his success. Many logs included comments that there are few contests which have this kind of strategic requirement, and the Commonwealth Contest is a welcome relief from the more common high QSO rate type of event.

At the outset of adjudication, just five points separated the two leading logs in the listener section. After extensive checking, the same narrow margin remained! So this year the Receiving Rose Bowl was awarded to C. Bradbury, BRS1066, with Eric Trebilcock, BCRS195, relegated to second position. Ron Thomas, BRS15822, who has won this section a number of times in the past, mentioned that this would be his last entry in the receiving section as he has now passed his licence examination and expects to hold a G4 call by next year. Congratulations, the committee looks forward to an extra entry in the transmitting section.

The only area of the rules which was commented on was the system of bonus scoring. There was some feeling that UK prefixes or countries should score separately and that some adjustment should be made to more equally balance the scoring between Canada, Europe and VK/ZL. Over a number of years covering sunspot maxima and minima, it is evident that the scoring system is, in fact, fairly well balanced. In recent years, G stations have come close to being overall winners and it must be remembered that the majority of overall leaders have very extensive antenna systems, both for the HF and the lower frequency bands, and that this may be the deciding factor rather than any supposed geographical advantage.

BERU 1983
1200UTC 12th March to 1200UTC 13th March
Rules in February AR.

AR

QSP

HF BAND USAGE.

So that everybody may have reasonable access to frequencies in the amateur bands it is a very long standing self-regulatory condition that small parts of the HF bands are set aside solely for CW operations. This is to avoid general chaos and is achieved by gentlemen's agreements. These are the segments:

CW ONLY

3500-3535 kHz, 7000-7030 kHz, 14000-14100 kHz, 21000-21150 kHz, 28000-28200 kHz.

If you hear voice modulation signals in these segments it is recommended that you tactfully remind those concerned that they are operating in the CW-only band segments and a QSY outside the segment would be appreciated.

CONTESTS

Reg Dwyer VK1BR
FEDERAL CONTEST MANAGER
Box 236, Jamison, ACT 2614

CONTEST CALENDAR FOR NOVEMBER 1982

3-4	YLRL ANNIVERSARY PHONE	CQ
6-7	INTERNATIONAL POLICE ASSN	AR
6-7	ARRL CW SWEEPSTAKES	CQ
7	CZECHOSLOVAKIAN CONTEST	
13	ALARA'S SECOND CONTEST	AR
13-14	EUROPEAN RTTY	CQ
20-21	VK VERSUS THE WORLD CW QRP	AR
20-21	ARRL PHONE SWEEPSTAKES	CQ
27-28	CQ WW DX CW	AR/CQ

DECEMBER

4-	START OF ROSS HULL VHF CONTEST	
4-5	ARRL 160 MTR CONTEST	CQ
11-12	ARRL 10 MTR CONTEST	CQ

JANUARY

15	POTOMAC VALLEY RADIO WCY TEST	
29-30	WHITE ROSE SWL 3RD TEST	

FEBRUARY

12-13 NZART NATIONAL FIELD DAY
12-13 JOHN MOYLE NATIONAL FIELD DAY

INTERNATIONAL POLICE ASSOCIATION

The German section of the Police Assoc. is organising a contest which will enable competing stations to qualify for the Sherlock Holmes Award and Trophy.

PERIOD — Saturday 6 November to Sunday 7 November.

TIME — 0000-0300 UTC; 0700-1000 UTC; 1400-1800 UTC.

CALL — CQ IPA.

MODE — CW and SSB only (no crossmode or crossband).

EXCHANGE — Non members: RST and serial, 56(9)001; IPA members: RST, serial and IPA, 56(9)001 IPA; US stations plus state abbreviation, 58(9)001 IPA V.

SCORING — 2 points for 80 and 40 mtr QSO; 8 points for 80 and 40 mtr DX QSO; 4 points for 20, 15 and 10 mtr QSO.

Stations may be worked only once per band.

MULTIPLIER — IPA country/US states per band.

RESULT — IPA countries x points = total points.

FREQUENCIES ±25 kHz.

CW = 3.575, 7.025, 14.075, 21.075, 28.075 MHz

SSB = 3.650, 7.075, 14.295, 21.295, 28.650 MHz

SSB, DX = 3775, 3800 (too bad we don't have them).

Logs to Anton Kohten, DK5JA PO Box 40 01 63 4152 Kempen 1 West Germany.

Further information on the awards is available from the FCM, please send SASE for information.

Contest front sheets for the CQ WW DX Contest are also available from me for a SASE or an IRC to cover the postage.

RULES FOR THE 1982 ROSS HULL MEMORIAL CONTEST

OBJECTS

Australian amateurs will endeavour to contact as many other amateurs as possible. Entrants must operate within the terms of their licences.

PERIOD

0001 UTC 4 December 1982 to 2400 UTC 9 January 1983.

EXCHANGE

RS(T) plus a three figure serial number starting at 001 and increasing by one for each contact, when 999 is reached a start is made again from 001.

BANDS

All amateur bands above 30 MHz, however cross band contacts are not permitted. Operation via active repeaters and translators is not allowed.

OPERATOR

Single operator only. One transmission only at one time.

CONTACTS

Two contacts per UTC day per band with each station providing 10 hours have elapsed since the previous contact.

DURATION

(a) 7 UTC days — not necessarily consecutive.
(b) 2 UTC days consecutive.

SECTIONS

(1) Phone (AM, FM, SSB, ATV and SSTV).
(2) CW (CW and RTTY).
(3) Receiving (any mode).

LOG SHEET

It is desirable that complete logs for the whole contest be submitted for cross checking purposes; photo copies are very acceptable.

The following details must be shown: Time UTC, Band, Emission, Stn worked, Tx exchange, Rx exchange, Points, Bonus. Each page must be totalled at the bottom.

FRONT SHEET

A front sheet must be attached showing the following information in this order:

Section, call sign, list of 7 best UTC days with daily score and daily multiple, daily total plus 7, day total, list of best 2 UTC days with daily score and day multiplier, daily total plus 2 day total, name and postal address.

SCORING TABLE — AUSTRALIA

Distance	52	144	432	576	1296	2304 up
Up to 100 km	1	2	5	20	30	50
100-200 km	2	5	10	30	75	100
200-400 km	10	20	40	50	100	200
400-800 km	20	35	60	75	150	300
Over 800 km	10	50	80	100	200	500

BONUS

(a) For each new call area in Australia, including own call area, 20 points once only per band per UTC day.
(b) For each prefix worked outside Australia, 40 points once only per band per day.

SPECIAL VK6 BONUS

VK6 stations only shall double the final daily score.

MULTIPLIER

All stations shall multiply the UTC day score, including the Bonus (a) and (b), by the number of bands used for scoring during that day.

SCORING TABLE — OVERSEAS STATIONS

52 MHz — 50 points; 144 MHz — 100 points; 432 MHz — 200 points. For contacts with Australian stations only.

AWARDS

A perpetual trophy is awarded annually for competition between members of the Wireless Institute of Australia. The winner's name is inscribed on the trophy and he receives a suitable certificate. The entrant with the highest score in either the 7 day or 2 day division will be the winner and his division will hold the trophy for one year.

Certificates will be awarded to the highest score in both the 7 day and the 2 day divisions. A winner of a 7 day certificate cannot be awarded a 2 day one as well.

Overseas entrants will be awarded certificates on the same basis, one for each call area.

SUBMISSION OF LOGS

Entries are to be sent to the FCM, Box 236, Jamison, ACT, and received no later than 28th February, 1983 and endorsed "Ross Hull Memorial Contest".

RECEIVING SECTION

Logs must show the same information as a transmitting log except for the second number exchanged. If both stations are heard both can be claimed but on separate lines of the log. Scoring will be as for a transmitting log.

Any scoring contacts can be logged, there is no limit to the number of times that one station can be logged.

The decision of the FCM is final and no correspondence will be entered into. **AR**

QSP

FIFTY THIRD ANNIVERSARY

The Radio Society of Sri Lanka celebrates its 53rd year of amateur radio activity in Sri Lanka in 1983. To celebrate the event arrangements have been made for the issue of a Commemorative Stamp of Rs.2.50 denomination with a first day cover.

The Minister of Posts and Telecommunications has accepted the invitation for the cancellation of the 1st stamp at a ceremony to be held at the General Post Office, Janadhipathi Road, Colombo 1 on January 17, 1983 at 0900.

Those wishing to purchase this stamp may forward their requests to The Director, Philatelic Bureau, 4th Floor, Ceylinco House, Colombo 1 with the necessary remittance to include return postage

AR

"COASTWATCH"

This is the new code name of the Coastal Surveillance Centre in Canberra which controls marine search and rescue operations over an eighth of the world's surface. This centre was involved in fifty major operations and 2000 incidents last year.

COASTWATCH activities include civil surveillance of Australia's 36,000 kilometre coastline, marine search and rescue operations and the monitoring of the positions of merchant ships and foreign fishing vessels.

The new charge free number of COASTWATCH is (062) 47 6666. The number (062) 47 5244 which is used for reverse charge calls remains unchanged. Make a note of these numbers in your log now

AR

GENTLEMAN'S AGREEMENT

All 21 MHz operators — please remember that 21 100 - 21.150 MHz is out of the phone sub-allocation as recommended by the International Amateur Radio Union and the "Gentleman's Agreement".

AR

DUZE DEWZ DUSE PDUEWS DEWS DYOUES DEEUES DEUSE DUESSE

Dang it! There's got to be a way to spell the word. I tried to look it up in the dictionary, but how can anyone look up a word if he doesn't know how to spell it? Webster should get onto a different system so we can find out how to spell words. What we are trying to say, though, is that it is that time of the year when we should all dig into our pockets for some of that green stuff to help us continue to grow. If you can talk the family into going over to see grandma and grandpa at dinner-time, you can save the amount required for our money man and make a great big smile adorn his face for a long time. How about it?

(Subs notices will be in the mail to you shortly. Ed.)

DXCC

At the time of writing, no news is available on the status of certain DXCC countries. It was rumoured that HK0/KS4 Serrana Bank, 8Z4 Neutral Zone were to be deleted by the ARRL DX Committee. Further, BY1PK QSLs are now being accepted.

During a recent trip to Burma, K5VT, was refused permission to operate and was told by the Vice President of that country that amateur radio was not permitted. K5VT, who has been able to put many previously difficult countries on the air, would be expected to be able to obtain a licence if they were available.

The only acceptable YI(Iraq) QSLs of recent times are those from YI1BGD and YI4SC. The ARRL are not, at present, satisfied with documentation of other operations. Finally this paragraph from the DX News Sheet issued by the RSGB may cause a few people to increase their blood pressure! Carl Henson, WB4ZNH is lobbying for a change to DXCC Rule 12 in the form of a new paragraph reading: *"For (a) and (b) above, the taking of lists and the solicitation of DX stations to operate from lists or nets, is poor operating ethics."* I personally do not have views either way. What intrigues me is that if the above is accepted, how is the ARRL expected to decide which QSOs were list operations and which were not?

THE TORSHAVN AWARD

The award is available to all licensed radio amateurs and SWLs.

The rules are as follows:-

PERIOD:	*May 1st 1983 0000 UTC to January 1984 2400 UTC.*
BANDS:	*All bands from 3.5MHz to 432MHz excluding 10-18-24MHz.*
MODES:	*All modes.*
CLASSES::	*One class only.*
SCORING:	*3.5 - 7 MHz .....40 Points*
	14 - 21- 28 MHz.....30 Points
	144 - 432 MHz.....75 Points

Contacts with the club station OY6FRA count double on all bands and 75 points is needed to claim the award.
Cost of award is 10 IRCs.

APPLICATION: No QSL cards, but a list confirmed by two licensed amateurs to:- FRA Awards Manager, PO Box 343, Torshavn. 3800 Faroe Islands.
(Thanks VK4KAJ).

WORKED ALL OY, WAOY

The WAOY Award is available to all radio amateurs and is issued in 3 classes: WAOY I, II and III, CW or Fone (SSB or AM) not mixed.

Mike Bazley, VK6HD
FEDERAL AWARDS MANAGER
8 James Road, Kalamunda, 6076

	VK Amateurs
WAOY I	25 Points
WAOY II	15 Points
WAOY III	10 Points

BANDS: 3.5 - 7 - 14 - 21 - 28 MHz.
SCORING: One point per QSO on 28, 21 and 14 MHz, two points on 7 and 3.5 MHz. Points being doubled up on all bands when working OY6FRA, 6NRA, W2GHK and SM5WI/OY.
DATE: ALL contacts after 11th April 1965 are valid.
APPLICATION: Confirmed list (no cards) and 10 IRC coupons to:- Awards Manager, Heri Olsen, OY3H, Box 184, Torshavn 3800. Faroe Islands.

THE GOLDEN SHEARS AWARD

Sponsored by Branch 46 Wairarapa. Contacts to be with Branch 46 financial members during the period 1st March/31st March, 1983 on the following basis:-

H/F and SWL:
1. Net contacts are eligible.
2. Points required: VK — 7 Points.
VHF:
1. Repeater QSO eligible.
2. Net contacts on repeater NOT eligible.
3. Points required: VK — 3 Points.
GENERAL:
1. Any band/mode or combination (except cross band).
2. ONE contact per member UNLESS member is operating Club Station or Mobile within Wairarapa.
3. NO QSLs required. Give FULL QSO data certified by another licensed amateur.
4. Application with $2.00 NZ or equivalent International Money Order to:- Awards Manager, PO Box 860, Masterton, NZ before 31st August, 1983.
5. POINTS SYSTEM: For contacts as follows:-
Golden Shears President ZL2AHU — 3 Points
Club Station ZL2OA — 2 points.
or YL Operator — 2 Points.
or Farming Branch Member — 2 Points.
or Mobile Contact within Wairarapa — 2 Points.
Branch 46 Member — 1 Point.
6. AIM . . . To help fund an operating room for emergency situations.

OZ PREFIX AWARD

The Copenhagen Division of EDR on the occasion of the 50th anniversary of its foundation issues the OZ-Prefix-Award. This award is available to licensed amateurs and SWLs anywhere in the world under following rules:

DX-Stations must work 1 station with each prefix OZ1 to OZ9 (9 QSL-cards).

A QSL-card from the club station OZ5EDR can be used as a joker to replace a missing QSL-card.

All amateur bands and modes are allowed. Special endorsements for CW, 2xSSB, RTTY, one band.

Please do not send QSL cards, but send a GCR list with the fee of 10 IRCs to: OZ1ACB, Allis Anderson, Kagsaavej 34, DK-2730 Herlev, Denmark.

This award also includes a sew-on EDR cloth badge.

ZS TOP BAND CERTIFICATE

1. To qualify for this award DX stations beyond 1600 kilometres of the borders of the Rupublic of South Africa need to contact only a single Division of the Republic of South Africa.
2. A GCR list from members of societies which are members of the IARU are acceptable if duly checked and certified by their Awards Managers. (Send application to VK6HD).
3. All contacts must be made after 1st January, 1960 with minimum CW report of RST 338 or phone or SSB R3 S3.
4. The certificate is issued free of charge to members of the SARL, but non-members are required to pay a charge of R1, 50 (10 IRCs).
5. Send application, with fee to ZS1ALO, Awards Manager, PO Box 3911, Cape Town, South Africa 8000.

Happy hunting 73s es DX de Mike VK6HD.

AR

WHAT FREQUENCY IS MY RTTY SIGNAL ON?

Most operators are using audio tones into a microphone socket to send RTTY and the following comments refer to such a set-up on HF bands.

Those using transceivers with digital frequency meter readouts or accurate dials often assume they are on the frequency thus indicated; however this is NOT the case.

If a separate frequency meter is used to measure RF output it will be discovered that the transceiver indicated frequency and the frequency meter readings will differ by an amount equal to the pitch of the audio tones used.

e.g. Using high tones mark is 2125Hz and thus when the transceiver is in the normal LSB position this means the mark carrier radiated will be 2.1 kHz lower than the transceiver indications.

To get RF output on say 7.040MHz you would need to tune to 7.042.1MHz when using high tones or 7.041.13 when using low tones.

To sum up, it must be remembered that the transceiver frequency readouts show the suppressed carrier frequency and NOT the resultant side band frequency.

Further to the above and considering suppressed carriers, if your suppressed carrier is 40dB down, then when someone tells you that you are 40dB over S9 your "suppressed" carrier will be S9!!! This makes a strong case for true FSK when using high power.

—From "South Aust. RTTY Group News" Aug '82

AR

GOOF DEPARTMENT

In our review of Les Moxon's book "G6XN HF ANTENNAS FOR ALL LOCATIONS" — August AR Page 53.

Three typographical errors have crept in — They are:- 1st column, 13th line from edge of page, "QUALIFIES" should be "QUANTIFIES".

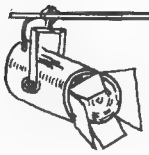
2nd column, 4th and 5th lines from top — same again.

2nd column, 9th line, 2nd para — "QUALIFY" should be "QUANTIFY".

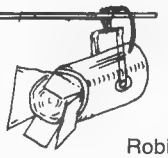
Please amend your copy now — Our apologies to all concerned.

(VK3UV — Ed).

AR



SPOTLIGHT ON SWLing



Robin Harwood, VK7RH
5 Helen Street, Launceston 7250

Well, the year is rapidly coming to a close. This year has certainly seen quite a lot of activity on the shortwave bands, especially from unexpectedly quiet regions of the world such as the South Atlantic. Now that the action has died down, the amount of activity has also gone down in proportion. Although, with the Middle East still being on the boil, many SWLs are monitoring stations and programmes emanating from this perennial troublespot to keep in touch with recent developments.

As far as conditions or propagation have been during this year, the average listener has experienced an increase in ionospheric disruption to the HF spectrum. This is to be expected as the sunspot numbers decline. One by-product of these solar flares and radio blackouts, is that stations that are not normally heard because a more powerful station uses the channel, can be occasionally observed, when for instance European signals are absent or are well down in signal strength. I find that signals from equatorial regions are particularly noticeable when propagation to Europe and the Northern Hemisphere areas is reduced. You will notice, especially if you live in areas where you can observe the Aurora Australis, that there will not be good propagation to stations under 500 miles, but signals from many thousands of kilometres away will be heard. This was the case on 3.5 MHz, when I had a sked with a VK7 at a time when the signals are usually well over S9, but on this occasion we could not read each other's signals. Also VK4's were coming in very loudly and clearly, much earlier than they are accustomed to doing. That night (Sept 3rd) there was quite a spectacular display in the skies from the Aurora.

Usually for a couple of days, after one of these displays, general propagation conditions are very poor, with frequent blackouts. Although you may not be able to observe these displays visually, one can notice their presence on HF by a rapid flutter on carriers. It also destroys the intelligibility of modulation, making the audio sound very thin and reedy.

"VOICES" FAILED:

As I predicted in this column, the magazine "Voices" has gone into liquidation. According to an interview on "Media Network" — the Radio Netherlands communications magazine — one of the individuals behind the publication stated the main reason it failed was that it was unable to attract enough sponsorship or advertising to make it viable commercially. As there are publications catering for those interested in international programming available from non-commercial organizations, the average shortwave listener will not miss out. However, quite a number of individuals lost out by subscribing to "Voices". The moral is to go for publications that have been around for some time, and not be attracted by a lot of glossy advertising with attractive subscription rates.

MORE SW BULLETINS

A few months ago, I did mention that there was a semi-weekly bulletin concentrating on developments in Africa called "QTH Africa". I note in the September WRTH Newsletter that the publisher has suspended publication because of the pressure of other activities. We hope that this handy bulletin will one day make a reappearance to assist those interested in broadcasts on shortwave from Africa.

Talking of bulletins, I recently received a bundle of magazines from a penfriend in Finland. They were very interesting and would contain a wealth of information on Shortwave radio, if I could read either Finnish or Swedish! Scandinavia contains most of the active DX clubs in Europe, and several clubs or organizations there are competing to produce a good magazine. Fortunately this bundle did contain some publications in German, which luckily I did learn a little of in college.

"Weltweit Horen" is the title of a monthly publication in German published by the AGDX Club in West Germany. It also has an occasional article written in English. The subscription price is $US22 (surface). However, the same organization has an International department, which is better known as the Worldwide DX Club, with a monthly magazine in ENGLISH for a subscription price $US12 (surface). A combined subscription to the English and German publications is $US31. This club is one of the stronger European organizations, and has been going since 1966. It has regular segments on HCJB's German language DX programme.

ZENITH GOES QRT

Another well-known radio manufacturer has discontinued its line of shortwave receivers. Some of our older DXers will remember the Zenith Receivers. These receivers have been around for fifty years or more. According to the September ANARC Newsletter, Zenith have departed the radio field altogether. Apparently they could not compete today with the modern Japanese models economically. In the same issue, it announced that Radio Shack/Tandy are considering re-entering the receiver field, with models manufactured in either Taiwan or Korea under their brand name.

WHERE ARE THE SWLs?

Just how many people do listen to shortwave programmes? It is a fairly difficult task to quantify the listening audience as it does depend on the station or its programming. But a recent finding asserts that it varies with the current state of the world's affairs. At times of crisis, the listening audience increases markedly, judging on listeners' mail at the various international stations. The audience in Europe and the USA has remained static, but the audience in Third World countries has dramatically increased also, judging on where most of the mail comes from.

QRL VK4??

Incidentally, I will be in VK4 in December, and will hopefully be able to detect the differences in propagation between the southern states and Queensland. My last trip was in the middle of winter, so it will be interesting observing what can be heard. I imagine that the frequencies will be rather noisy in summer in tropical areas, from what I have read. But I do expect that I will probably be occupied with other activities whilst I am there. But I would welcome the opportunity of meeting SWLs or DXers in the Brisbane/Gold Coast region if it is possible. I would suggest that those interested in such a meeting contact me before the 20th of November to see what we could arrange. I am also hoping to be on 2 metres with a hand-held unit.

MEDIUM WAVE

While I am in the North, I do hope that it will be possible to receive the Indonesian stations on medium wave, or should I say the private, non-government stations. There are quite a number of these stations operating at present, mostly on low power of about 250 watts or less. Most are licensed, but there are some pirate stations observed. I recently received a summary of these stations called "ACARA RADIO SELURUH INDONESIA" with the programme details of the respective stations. They seem to operate between 0500 until 2400 local Indonesian times. I do note that ALL stations are obliged by law to carry the news from the governmental RRI network, and are not permitted to originate any news or current affairs programmes on their own initiative.

As many DXers are aware, there are quite a number of RRI stations active on shortwave, but the trend, according to another penfriend, is to relocate some of the smaller district stations on to the medium wave of FM, leaving the larger stations with higher power such as Ujung Padang or Palembang or in Jakarta itself to link with other remote areas via shortwave. For those who are especially interested in DXing Indonesian stations, I would recommend that you subscribe to the Down Under DX Circle, which specializes in Asian stations. Write to them at 7 Donald Street, Burwood Vic. 3125. The cost is 6 IRCs per issue.

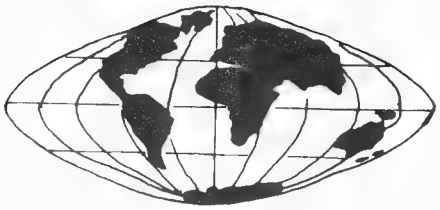
Harking back to AGDX, I see elsewhere they are a Federation of 13 German-speaking DX clubs in Europe, and not just one individual club.

Well, that is all for this time. Until then, the best of 73's and good DXing!

—Robin VK7RH

AR

JOIN A NEW MEMBER NOW!



VHF UHF - an expanding world

Eric Jamieson VK5LP
1 Quinns Road, Forreston, 5233

AMATEUR BAND BEACONS. . . .

Refer September 1982 issue. Next listing anticipated December 1982.

The only comment this month re beacons is the continuing concern felt east of Western Australia, and VK5 in particular, that the 144 MHz beacon most of all is not operating from Albany. We seem to be really lost over here without it, and hope it will soon be available again.

COWELL REPEATER

The new repeater located at Cowell on Eyre Peninsula (South Australia's west coast) is now operational and providing a very good coverage. Bob VK5ZRO reports it is available on many more occasions than the Channel 2 repeater in the mid-north, no doubt due to terrain. Bob reports even working through the Cowell repeater whilst travelling down King William Street in the heart of Adelaide! Much credit for the repeater is due to Paul VK5QM.

AURORAL CONTRACTS

Mick VK5ZDR was pleasantly surprised one night around mid-September to work into VK3 and VK7 on 6 and 2 metres via auroral propagation. Signals were up to S9 but intelligibility suffered due to that strange auroral effect which tends to garble the sound on SSB and to broaden the signal, but does not seem to worry CW to the same extent. Contacts were made late at night, around 1430UTC best in VK3 being VK3AQR, whilst Ian VK7ZIF made up the Tasmanian end. A week or so later Mick again observed the phenomenon but signals were too weak on this occasion to produce any worthwhile contacts.

CEDUNA STATION

Operators several years ago will remember the exploits of Kerry VK5SU who really made things tick from Ceduna on the far west coast of SA, particularly on 6 metres, winning the Ross Hull Contest several times. Later he tried 144 MHz and found the location interesting, being somewhere near the centre of the path between Adelaide and Albany.

Ceduna has been off the map mostly during recent times since Kerry went to NSW and became VK2BXT. Now, a new station has come on the air from Ceduna, VK5KMW. Not many details are known at this stage but at least two contacts have been with Mick VK5ZDR, the first on 24/9 at 2330UTC with signals 5 x 9, and again the next morning about the same time, but the signals had dropped off considerably.

We now await with some considerable interest the forthcoming Es season to see if Ceduna is still the prime operating spot it was years ago!

432 MHz IN VK5.

A number of new operators are getting onto this band and the upsurge in activity is most welcome. Amongst these are Barrie VK5ZAU who has come up on 432.1 MHz presently with 1 watt but has been worked by Bob VK5ZRO at least. Others to put signals on the SSB section of the band are Andrew VK5ZUC, Tony VK5KAT, Peter VK5KPJ, David VK5KKA, all from the Adelaide area; Ken VK5KEN from Smithfield, Paul VK5QM at Whyalla, and Ron VK5ZLJ has been noted from Port Wakefield. The ever faithful Bob VK5ZRO is also there, working across to Don VK5ZRG at Whyalla. David VK5KK comes on occasionally, as also does VK5LP, Mick VK5ZDR is there too, plus Syd VK5ME, and David VK5CK has been threatening to improve his 70cm signal for some time. There are still quite a few others but they have'nt been heard here for a while, but I'm hoping!

144 MHz

It is noted with interest that there are quite a few new call signs appearing on the 2 metre band, particularly at the lower end where SSB and CW contacts take place, and it is good to see increased use of the band being made.

It has been noted however, that there is a growing tendency for local extended period contacts to be made on the recognized calling frequency of 144.100 MHz. In the main I am sure this is due to operators not really being aware of what constitutes accepted operating practice on 144 MHz and other bands for that matter.

144.100 MHz has been long recognized as a calling frequency on 2 metres, ie if you are looking for a contact then it is most likely to be initiated if you call on that frequency. It would seem desirable then for both parties when contact has been made to move away from the calling frequency to leave it available for someone else to use in the same way. For a contact to be maintained there, particularly between two local area stations, makes it very difficult for anyone to hear a weak signal from some other area.

If your contact is only to be of short duration then it may not matter quite so much, but quite often what begins as a short contact can extend to ten minutes or even longer, so it may be good practice at all times to move off the calling frequency. When one speaks about moving off the calling frequency this doesn't mean moving say 3 or 5 kHz. If in the metropolitan area, your signal will still effectively blanket out any weak signals. A move of at least 20kHz is preferable, and maybe 50 kHz even better, bearing in mind you can always come back to the call frequency at the conclusion of your contact to see who else is there.

The above comments are directed to all operators, not only the new ones, as it is not uncommon to hear operators who should know better blocking out other signals on or near the calling frequency. So it behoves all of us to operate with due regard to other users of the band, remembering that maybe you cannot hear any other stations on 144.100 but there could be others better situated who can hear signals, so by playing it safe everyone should be able to operate satisfactorily.

NEWS FROM THE WEST

It seems that most of what is happening is taking place in Western Australia, or else these are about the only areas writing in these days!

Graham VK6RO has written to say he made another trip up to Carnarvon and Dampier from 31/8 to 9/9/82, and worked a number of JA's on 6 metres. Bob says "Propagation was rather poor and the openings short, but at one stage I was driving at 110 km/h and working JA's at S9 + 20dB on SSB both ways, the whip antenna was at about 45 degrees — the band was well and truly open!

"Total JA's worked 83, areas JA1,2,3,4,5,6,7,9, no sign of 8 or 0; SSB: 78 worked 5x9; AM:1 worked 5x9; FM: 2 worked 5x9; CW: 2 worked 529. Times: various from 0340 to 1300UTC, with some openings being as short as 5 minutes. JA2IGY beacon heard 10 times. TV on 49.750 heard 5 times.

"Equipment: FT690R plus 30 watt PA and ¼ wave whip on roof of car. Openings: 11 all told. General: all contacts made from mobile. Heard KA6OR Okinawa calling CQ 5x1 at 1255UTC on 4/9, no QSO.

"I have now worked 801 contacts to Japan mobile since October 1979, plus KG6DX, HL2JD, and heard ZS2SS, P29ZSA, H44PT and VS6BE. Have also worked mobile to mobile with JA4HTW at 5x7 both ways." That's a pretty good effort, Graham. Additionally, Graham has worked ZL, YJ8, H44, VS5 and half P29 from home, and crossband 28 to 50 MHz with KH6HI, ZS6LN and VS6BE.

Whilst still in Western Australia, two letters have come from Peter VK6ZDY, with an outline of his activities in that State. The first letter came whilst I was on my around Australia trip, so it is somewhat late, but the following details are included because it gives a good coverage of winter time 6 metre conditions, where it has been known for years that there is enhanced propagation in the winter time as well as the summer, but not to the same extent.

"1/6: 0145UTC weak northern 50 MHz TV; 9/6: same, 5x5; 10/6: 0848UTC heard JA's working VK4, 0854 worked JA6LJO 4x1; 11/6: 0750UTC weak JA's on 50 MHz, then some TV, then close at 0840UTC, 0859UTC TV harmonics on 48 MHz, 0902UTC Malaysian TV 53.750 5x9; 12/6: 0200UTC hearing VK5VF and weak VK5's, 0223UTC VK5ZBU, 0238UTC CH.0 Brisbane, 0247UTC VK5AGM 3x1, 0735UTC 50 MHz TV weak; 13/6: 0523UTC VK5ZRO 5x7, 0525UTC VK5ZBU 5x9, then VK5KK. 0620UTC hearing VK6RTT at Carnarvon 5x7 backscatter, 0831UTC VK3RMV beacon 5x3, 0840UTC VK6OX Andy at Carnarvon 5x9, 0909UTC VK8VF beacon 3x1, same beacon into Carnarvon 5x9 16/6: 0540UTC TV Brisbane 5x7, 0610UTC VK5VF weak, 0615UTC VK5ADT 5x2; 20/6: 0703UTC TV Brisbane; 26/6: 0442UTC VK3RMV weak, 0500UTC VK5VF strong, 0506UTC VK5ZRO 5x9, 0509UTC VK2ZIB 5x3, 0514UTC VK2YOE 5x3, 0525UTC VK5ZEE heard working VK2, 0529UTC VK2DDG 4x1, 0536UTC VK5ZEE 4x2, 0545UTC TV Brisbane; 27/6: 0430UTC TV Melbourne, VK3RMV beacon, 0444UTC VK5ZDR 5x5, 0450UTC TV Brisbane, VK5VF; 0503UTC VK5ZRO 5x5, then VK5ARZ, VK5AMK. 25/7: 0700UTC 50MHz JA's 5x3, 0840UTC weak commercial traffic from north on 50 MHz; 28/7: 0810UTC same, 29/7: same, plus TV harmonics; 30/7 same. 7/8: same; 8/8: 0100UTC weak JA's and CW on 50 MHz, 0112UTC JA1,3,6, 5x7 on 50 MHz, contest in progress, 0140UTC CW on 49.975, 0204UTC intense white noise from north with QSB — Solar activity? 0231UTC same intense white noise."

Peter uses an FT625R into a Swan MK6B linear with 400 watts PEP, home brew 9 element yagi 12.6 dB gain, 30 dB F/B, 30 foot boom, 18 metres high, fed with HM8 solid

aluminium jacketed coax. QTH is 300 metres ASL in the Darling Ranges, 17 km from Perth. Also, Peter is looking for 6 metre meteor and forward scatter skeds with any interested persons.

The second letter from Peter VK6ZDY is a follow on from the previous one. 9/8/82 0321UTC TV harmonic weak on 50.332; again at 0920UTC but much stronger; 10/8: 0320UTC weak TV 50.332; 13/8: same; 14/8 same; 15/8: 0744UTC JG2AJK 4x2, JL1CJM 4x2, JA4MBM 5x9, JA5CMO 4x2; 17/8: 0320UTC 50 MHz TV; 18/8 same; 22/8: Australian military traffic on 50.100 5x9 on FM!! This was a "reserve" exercise. 15/9: 0402UTC 50.075 beacon weak, 0411UTC strong TV on 48 to 49 MHz; 19/9: 1225UTC 50.100 Australian military traffic 5x7 on FM; 21/9 0829UTC weak JA's on 50 MHz, strong TV 48/49 MHz.

These two letters from Peter certainly indicate the amount of possible activity in which you can participate if around at a time of the year when one might generally be forgiven for saying the band is closed!

LETTER FROM WOOMERA

Neil VK5ZEE at Woomera has written to say that he and his father VK5LA are currently the only ones in that town who operate on VHF, the others being mainly 14 MHz operators.

On 31/7 at 1330UTC until 1445UTC Neil had access to Adelaide Ch. 8 repeater and despite repeated calls was only able to raise VK5KPP at 1426UTC. He also tried on 144.100 SSB to no avail. From then until 21/8 no signals at all on 52 or 144 MHz, then on that day at 2030UTC Ch. 8 repeater was 5x9 with the return signal on 147.000 S5. At 2145UTC he contacted VK5KNE mobile on the South Eastern Freeway. At 2205UTC VK5ZUC came on to the channel and requested a contact no 144.100 SSB. At 2208UTC contact was established and maintained a workable signal until 2338UTC. In between he worked VK5ZRO at 2244UTC and VK5ZDR at 2314UTC.

Neil's equipment is an IC560 and 5 elements on 6 metres, FDK Multi 750A and Lunar 80 watt amplifier to 5 elements vertically polarised for FM, and SSB 13 elements about 10 metres high, on 144 to 148 MHz. Soon to be in use is a 144-432 transverter and a pair of 11 elements. He also has 70 cm ATV under construction with only the RF amps and antenna system to complete. So far access to Oscar and RS satellites unfruitful but more positive attempts are to be made in the near future.

Neil has been VK5ZEE since arriving in July, previously VK2ZEE. His father is VK5LA and spends most of his time on 28 MHz but shares some of the VHF gear.

If you are interested in contacting Neil you might remember his gear usually runs continuously from 0630 to 1330UTC, 2030 to 2200UTC and quite often also from 0230 to 0315UTC. Neil would certainly welcome contacts. He would also like to install some beacons at Woomera but needs to convince the HF operators, who comprise most of the members in the "mandatory" club, (which then permits transmitters to be operated in the restricted area of Woomera) of the need for such devices, which may well be a very difficult task!

THE OVERSEAS SCENE

According to Bill Tynan, W3XO, of QST's "The World Above 50 MHz" their 1982 Es season *"can probably be described as having its up and downs. There certainly have been days at a time when not much happened. If one was not paying very close attention to the band, or listened occasionally, the conclusion could be reached that openings have been few. For those who stuck with it, however, the rewards have been handsome. Many of the faithful have added four or more countries to their totals.*

"K8EFS was one of those stalwarts. On 1/7 Andy worked TU2NA, and the following day it was country 51 with KA3BUJ/8R1, and on the 3/7 a further country was added with 4U1UN. Other alert 6 metre operators were also getting their share of DX. Through K5ZMS I learn that YS1ECB was worked by WB4PFB and others on 20/6. VE1BNN found the period 4/7 to 8/7 very productive with a crossband QSO with CT2EE. It is amazing how many times the path from the East Coast to Azores has been open. Reg VE1BNN heard FY7THF beacon on 7/7 with very strong signals, and on that day Reg worked his 55th country with KA3BUJ/8R1."

Looking at the continuing overseas reports of long distance contacts it seems reasonable to assume that the oft quoted statement that 6 metres never closes, only the operators do, may be nearer the truth than realised. It does seem that Cycle 21 has given a lot of people a taste of what 6 metres has to offer and I am sure we will hear from time to time of good and somewhat unusual contacts in the future as compared with what seemed to be available before Cycle 21. If that is true, then as Bill Tynan says, the vigilant will be rewarded.

MACQUARIE ISLAND VK0AP

During 1983, which is World Communications Year, a six metre station will be operational from Macquarie Island. Macquarie Island has not been active on six metres for ten years since the operation by VK0WW and VK0ZVS.

Peter McLennan, who will be on Macquarie Island and holds the callsign VK0AP will be active on six metres. Peter VK0AP, will be taking a six metre station with him to Macquarie Island.

The six metre station was assembled on very short notice by Lionel VK3NM, Gil VK3AUI, Ken VK3GJ and Kevin VK3AUQ. Considerable assistance was obtained from Peter VK3FR, Dave VK3DHF and Ken VK3AH.

The station consists of an FT680R, a Lunar 100 watt linear amplifier, a programmed Keyer, power supplies and a Werner Wulf 4 element Beam. In assembling the station considerable assistance came from Emona with a rush overnight delivery, and from Werner Wulf, who burnt the midnight oil, and made up a special boom. Keith Haslem of Eastern Communications also helped in digging out spares and other items.

The Keyer was being built for Heard Island but a change of EPROM by Ken VK3GJ soon fixed that.

Ken VK3GJ and Gil VK3AUI working on the EPROM.

Peter VK0AP will run the Keyer for extended periods on 52.1 MHz. Should 50 MHz operation become possible a change of frequency to the 50.1 MHz region will take place. The Keyer will normally be run with 10 watts output from the station. However 100 watt output will be used when looking for F layer DX across the Pacific.

The Keyer sequence is approximately 80 seconds of call followed by a listening period of 30 seconds approximately. The Keyer ends AR K immediately prior to the listening period after the last call sign of a sequence.

Operation will commence mid November 1982 and continue through 1983.

The QSL Manager for VK0AP is Peter VK3FR, 29 Woodcrest Road, Vermont, 3133. Cards for VK0AP may also be sent to the QSL manager VK3FR via the bureau. Direct cards should of course be accompanied by an SASE or other means for return of a direct QSL. 2 IRC's = Airmail Post.

With both Macquarie Island and Heard Island on six metres 1983 will be truly World Communications year for VHF operators.

That seems to be about all for now, but remember the ZLs have a VHF Field Day over the weekend of 4th and 5th December. I have received no news of any similar contest being sponsored in Australia. Closing with the thought of the month: *"He who knows others is learned; he who knows himself is wise."*

73. The Voice in the Hills.

AR

WIA VIDEOTAPES

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VK2 MINI BULLETIN

Athol Tilley, VK2BAD
Box 1066, Parramatta 2150

NOTE OUR NEW POSTAL ADDRESS:

P.O. BOX 1066, PARRAMATTA 2150

OUR OFFICE IS NOW LOCATED AT:

109 WIGRAM STREET PARRAMATTA

PHONE: (02) 689 2417

LISTEN TO BROADCASTS FOR FURTHER DETAILS

*** Please note phone no. amendment.*

DIVISIONAL INFORMATION

PRESIDENT: Susan Brown VK2BSB.
SECRETARY: Athol Tilley VK2BAD.
POSTAL ADDRESS: PO Box 1066, Parramatta, NSW, 2150.
OFFICE ADDRESS: 109 Wigram Street, Parramatta, NSW.
PHONE NUMBER: 689 2417.
HOURS: 11 am to 2 pm Monday to Friday. 7 pm to 9 pm Wednesdays.
BROADCASTS: Sundays at 11:00 and 19:30 local. * = Morning only. *1.8125 (Ncle relay), 1.825, 3.595, *7.146, 28.32, 52.12, 52.525, 144.12, Repeaters *6700 Orange, 6750 Gosford, *6800 Lismore, 6850 Wollongong, 7000 Sydney, *7100 Newcastle, 8525 Sydney.
QSL BUREAU: Conducted by the Westlakes ARC. PO Box 73, Teralba, 2284.

COUNCIL REPORT

Divisional Council met on the 17th of September at Parramatta. In response to a submission from the VK2 WICEN, Council resolved that six SC9 UHF transceivers be allocated for use by WICEN in establishing links between Dural, the City and search centres.

After considering next year's Divisional budget, Council decided that the Division's share of the membership fee remain the same as this year and not be increased. We were advised that Federal WIA had increased their share of membership fees by $2.

Athol Tilley and Susan Brown reported on a recent joint DOC/WIA meeting held in Sydney. Council was pleased to note the considerable improvement in the pass rate for VK2 candidates in the May 1982 Novice and AOCP Telegraphy exams. VK2 WIA raised the poor pass rate by VK2 candidates for previous exams at the previous joint meetings. DOC advised that if a licensee notes a discrepancy in his listing in the WIA Callbook, the licensee must report the error directly to DOC so they can check if the error occurs in their records. Monthly lists of new licences could not be provided directly to the VK2WIA (for membership drives) as they could be subject to deletion of certain details (at licensee's request). Various reasons were given for delays in processing UHF repeater applications and verbal replies were given to some outstanding correspondence from the VK2 WIA.

An application by the Illawarra ARS to establish a VHF and UHF repeater to cover the northern Wollongong suburbs was accepted and passed on to the Department for processing.

The affiliation of the South West ARS was terminated as SWARS had advised the WIA that they were not currently active.

Minutes of the WIA Education Service were discussed and Council decided that the attention of the WIAES be drawn to various by-laws and Articles of the WIA NSW Division.

An offer from Ross Wilson, VK2BRC, to act as VK2 Slow Morse Co-ordinator was accepted. Tom Delandre, VK2PDT was appointed as VK2 JOTA Liaison Officer. Congratulations to Ross and Tom in filling two important positions.

It was decided to purchase a quantity of VHS video cassettes and have them dubbed with most of the titles from the Federal Video Tape Library. We are grateful for the offer by John Ingham, VK5KG, in providing the dubbing. The completed tapes will be available for loan to VK2 Affiliated Clubs.

ANARTS made a request for use of the WIA building for its meetings. Council resolved that in accordance with policy previously adopted, the Parramatta building is owned by, and for the use of, WIA members and is not available for use by outside groups for general meetings. Council noted that adequate alternate meeting venues existed for such groups, such as public schools, often at no charge.

Council decided to donate $800 to the 1983 Heard Island DX Expedition. The $800 will be used to purchase amateur radio equipment for this expedition and will remain the property of the VK2 Division at the conclusion of the expedition. Council felt this was a worthwhile contribution to publicity for amateur radio in World Communication Year in 1983.

The registered office of the WIA NSW Division was transferred to the first floor, 109 Wigram Street, Parramatta, NSW.

Federal Councillor, Tim Mills VK2ZTM, announced he had decided to step down after many years in the position so another member could gain experience before the next Federal Convention. He was appointed as a VK2 Alternate Federal Councillor. Stephen Pall, VK2PS, was appointed as Federal Councillor for the NSW Division. This Division now has two Alternate Federal Councillors, the other being Wally Watkins, VK2DEW.

STATE REPEATER SUB-COMMITTEE

At the August meeting of the WIA NSW DIVISION Repeater Sub-Committee, details of an application from the Illawarra ARS to establish a VHF and UHF repeater were completed prior to submitting the application to Divisional Council for approval. A number of other proposals are awaiting details from applicants before they can be completed and submitted to Council.

The rapid growth in repeaters in VK2 has resulted in a shortage of free channels in some areas. Future development will have to be in the top MHz, but this is not a problem with current equipment.

Summer conditions in the next few months will bring VHF repeater DX, with problems of co-channel interference on shared channels. If you hear a DX repeater, take care that you do not time out a local repeater on the same channel. Frequency changes have been suggested to some groups and these should overcome co-channel interference, allowing more efficient use of the affected repeaters.

Repeater groups should note that a repeater channel allocation is determined from the information presented with the application to establish a repeater. Channels are allocated from nationally agreed and approved frequencies and in accordance with repeater plans developed within and between states. Applications to establish repeaters and beacons should be submitted to the State Repeater Subcommittee and for NSW should be sent to WIA NSW Division, PO Box 1066, Parramatta, 2150. It is the function of the State Repeater Sub-committee to check and prepare any application prior to submission to Divisional Council for approval. The application is then forwarded to the Department of Communiications for processing and issue of a licence.

The DOC then issue a licence for the repeater at the site and channel indicated on the application. Some groups have altered conditions or the location of their repeater without the authority of the DOC or advising the State Repeater Sub-committee. It should be noted that such action may be a contravention of the licensing conditions and has contributed to some of the current co-channel interference problems.

While there have been delays in DOC processing of UHF applications in the past, the department has advised that a number of licences are in the process of being mailed to the applicants for the UHF repeaters.

Adapted from notes by Tim Mills.

HONORARY SOLICITOR

At the September meeting, Council recorded its sincere appreciation to the Honorary Solicitor, Fred Herron VK2BHE, for his personal interest and assistance during the property transactions for the sale of Atchison Street and the purchase of Parramatta. Fred handled all legal matters and smoothed out some of the problems during these transactions. Despite tight schedules between settlements, Fred ensured that we had an almost trouble free operation. This was not the first time Fred has assisted this Division.

In 1978, Fred spent untold time researching, drafting and presenting the current Articles of Association to members for their approval. He was never officially thanked for his efforts in ensuring this Division had Articles which reflected the wishes and needs of members. Often we forget the considerable behind-the-scene work performed by volunteers assisting their fellow amateurs.

AMATEUR ASSISTS AIR-SEA RESCUE

Tom Pyke, VK2ZZ, has provided the Division with details of assistance he provided to a disabled yacht in the Pacific Ocean near New Caledonia.

At 0930 on 23/8/82, VK2DSB intercepted a distress call on 14.130 MHz from the yacht. As VK2DSB was a visitor from Holland, there were some language difficulties but a request was made from the vessel to notify FK8AU through his son, who was the Police Commissioner in Noumea. VK2DSB requested Tom VK2ZZ to act on this report so Tom notified the following:

1. Air-Sea Rescue Operations in Canberra.
2. Department of Communications in Sydney.
3. The French Consulate in Sydney.

Air-Sea Rescue undertook to look into the report, but commented (quite reasonably) on the lack of precise detailed information as to the distress vessel's whereabouts. It should be noted that the language barriers were formidable as VK2DSB was a visiting Dutchman and the distress vessel FK8DU was French.

Air-Sea Rescue reported back to Tom at 1300 that a helicopter had been despatched to rescue the crew of the disabled yacht.

VK2DSB originally broke into a contact between VK2ZZ, 3NA/mobile 4 and 5ZY with VK2ST assisting later with advice. Amateur radio was of assistance to the yacht concerned but Tom reports he still is not clear as to who was rescued, their location and by whom they were assisted.

Report supplied by Tom Pyke VK2ZZ.

NEW OFFICE AND LIBRARY

The new Divisional office is now fully functional and the furniture has been completed in the library/lounge area. These facilities are owned by, and for the use of, WIA members so why not call in and inspect them. The building is open during the day but to assist members, the office and library is also open each Wednesday evening between 7 and 9 p.m. A Councillor will be in attendance during these hours to assist you.

QSL cards are arriving from the Bureau and these are regularly placed in the drawers at Parramatta. If you have asked for your cards to be sent to Parramatta, you can call in to collect them when the office is open.

There are adequate facilities to read books or simply chat with fellow amateurs in the pleasant lounge surroundings.

BLUE MOUNTAINS FIELD DAY

The annual field day of the Blue Mountains Amateur Radio Club will be held on Sunday, the 14th of November at the Springwood High School, Chapman Parade, Faulconbridge. It is expected that all the usual events such as foxhunts, talkins and children's events will be provided.

For details and a program, write to the club at PO Box 54, Springwood, 2777.

DETAILS OF TWO CLUBS AFFILIATED WITH THE NSW DIVISION

COFFS HARBOUR ADARC
PO Box 655, COFFS HARBOUR, NSW, 2450.
Net: Monday at 1000UTC on 3.610 MHz using VK2DVF.
Meetings: Wednesday at 7 pm at the Orara High School in Bray St., Coffs Harbour.
Vice-Pres: Bruce VK2DDU, Secretary: Dave VK2DUR, Others: Percy VK2QV, Bob VK2AWA, Rick VK2BKV.
Classes: NAOCP.
Repeater: VK2RCH channel 6650.
Field Day: Easter at Urunga and Bellingen.

ORANA REGION ARC
93 Worth St., West Dubbo, NSW, 2830.
Net: Monday, Wednesday and Friday at 1000UTC on 3.620MHz. 3rd Friday of each month, 1930h on channel 6500 using VK2AJ0.
Meetings: Last Friday of each month at the Orana Education Centre.
President: John VK2ZMT, Vice-Pres: Lee VK2DGX, Secretary: Jim VK2AJ0, Others: Peter VK2VEH, Gordon VK2DJA, Trudy Hanson, Frank Wall.
Classes: AOCP and NAOCP.
Repeater: Testing on 6800.
Field Day: BBQ in mid September.

COMING EVENTS

Blue Mountains Field Day at Springwood: 14th November.

Homebrew Competition entries due (see page 58 August AR): 30th November.

NSW members and clubs are invited to submit news items for inclusion in these notes to WIA PO Box 1066, Parramatta, NSW, 2150. Items for January 1983 AR must reach us by November 15.

Athol VK2BAD.

AR

FIVE-EIGHTH WAVE

— Jenny Warrington VK5ANW
59 Albert Street, Clarence Gardens 5039

You only have to ask! That's one of the nice things about this fraternity. In my September column I said that I couldn't see how one would have scored the 6 point relay competition for the Fisk Trophy. Dick Baty — VK5MD (formerly 5MH) the donor of the Trophy took the trouble to write and explain it to me.

"The object of the exercise was to pass a message from one state to another, until it had been handled in six states. The scoring was as follows.

1. *One point for originating a message and passing it on to a second call area.*
2. *One point for receiving the message from another call area, and one point for passing it on to another call area not already in the preamble. (ie 2 points for relaying a message)*
3. *One point for receiving a message and not being able to pass it on either because you couldn't contact a call area not already in the preamble, or because you happened to be the sixth call area."*

Thank you, for the above information Dick, and we trust that you will soon be back home after your current stay in hospital.

I also received from Clarry Castle VK5KL, a photocopy of page 8, of AR 1st Feb. 1935, which gives the results of that same contest, but states that VK5MH tied with VK5JA (993 points each) and not with VK4EN which I think is what is engraved on the cup.

We were asked recently to provide a speaker on Amateur Radio for a Kiwanis' meeting, and Bill VK5AWM bravely accepted the challenge. They are interested in raising money to help the handicapped become amateurs, and we hope that we shall be able to give them assistance in this worthwhile project. (our part will be technical and educational, rather than financial)

One of the 'projects' that Council set itself this year was to review and update the Constitution. A sub-committee met, and was pleased to discover that much of the ground work had already been done by a previous group, and only needed 'tidying up'. The proposed changes will be published in the next issue of the local 'Journal' Read them carefully and come to the meeting on 23rd Nov. with any constructive criticism or suggestions. Remember, this will affect you, and we don't want to ruin the Christmas Party by discussing the Constitution, simply because we couldn't get a quorum at the November meeting!

Diary Dates

21st Nov W.I.A. Picnic — Bridgewater Oval (from approx. 11 am)
23rd Nov Constitution Review meeting (8.00 pm BGB)
30th Nov. Buy and Sell (7.30 pm BGB)
7th Dec Christmas Social (7.30 pm Thebarton Assembly Rooms)

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Are you lost and wondering

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SHORTWAVE PROPAGATION HANDBOOK...CQ
ANTENNA ANTHOLOGY.....ARRL
VHF COMMUNICATIONS
(Back issues — all four issues for years 1970-1981 except issues 1 & 4 of 1971, which are unavailable).
WIA BOOK Vol. 1 ..... $3.50 — 190 grams

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OPTICAL FIBRE PHONE LINK

A 204km optical fibre phone cable — believed to be the longest in the world — has come into service between London and Birmingham.

Optical fibres are hair-thin strands of pure glass carrying messages and information as pulses of light.

Each strand can carry up to 2000 phone calls simultaneously and enough strands to carry 10,000 calls could pass through the eye of a needle.

from "Information Technology from Britain" Sept. '82
AR

440 MILLION TELEPHONE CALLS?

Every telephone subscriber in Britain can now dial direct abroad, to 440 million phones (93% of the world's total) in 121 countries.

In 1930 a three minute call from Britain to Australia via the operator cost $10.20 (approx. $119 today). The same call direct today would cost $6.30.

from "Information Technology from Britain" Sept '82.
AR

VK4 WIA NOTES

Bud Pounsett, VK4QY
33 Lasseter Street, Kedron 4031

THE XII COMMONWEALTH GAMES STATION, AX4QCG

As these notes are being written, the XII Commonwealth Games are only a few days away. Brisbane is well prepared to receive all the thousands of visitors who will be coming to our State Capital for this great sporting event. The Brisbane City Council have been working to create a festive atmosphere for the past several months. Roadworks have been in full swing to facilitate an even flow of traffic, our South Eastern Freeway has been pushed ahead at a feverish pace to give a rapid transit time from the inner city area to the major games site, QE II Stadium, to the south of Brisbane. Colourful banners proclaiming the XII Commonwealth Games are decorating the major thoroughfares of our city.

Not to be left out of all this excitement, the Wireless Institute of Australia, Queensland Division, applied for a station licence for an amateur radio station to operate at a games venue. This licence was duly granted and the callsign AX4QCG was issued.

That was the easy part. Now came the job of convincing the Commonwealth Games Authority that it was essential to operate an amateur radio station from one of the sites. Fred Saunders, VK4AFJ and Rod Taylor, VK4YRT, got the job of negotiating and started running into brick walls. The Games people were not quite as enthusiastic as we were, to say the least.

Some of the objections raised were the fear of interference to public address systems, and radio and television broadcasting services. The possibility of our station passing sporting results around the world faster than the radio and TV broadcasting people and the fact that here was another problem and another team of people to worry about. Fred and Rod kept hammering away at the brick walls and finally managed a break-in — to QE II Stadium, but with some restrictions.

One of these was that there were to be no HF transmissions made from the site. This was solved by using 70cm link equipment between a caravan in the QE II complex and another caravan at Woodridge, a few kilometres to the south. This caravan is located at the home of Geoff, VK4AMP whose HF aerials are being used. This arrangement did solve one big problem, that of erecting efficient HF aerials within the Games complex, particularly beams for the three higher HF bands.

A major effort has been made by Geoff Adcock, VK4AG, who designed and built the interface units at each end of the 70cm links. There are two pairs, one for each direction, in a duplex arrangement. To keep the levels constant over these links, a local Brisbane electronics firm, DELSOUND PTY LTD, have loaned two very expensive, high-quality audio limiting amplifiers. Rounding up equipment, acquiring caravans, organising a team of operators has been the task of David Jones, VK4NLV, who has done an excellent job in this regard. Each Sunday for weeks, VK4WIA has been broadcasting the frequencies to be used by AX4QCG. The Queensland Divisional Council has been right behind this project and various councillors have contributed their time and energy to the establishment of this station. We hope that you worked AX4QCG and became eligible for the special once-only QSL card.

Here is the list of members who have been accredited to operate AX4QCG from the QE II stadium. Fred Saunders, Rod Taylor, David Jones, Geoff Adcock, Guy Minter, Doug Fowler, Doug Charlton, Fred Lubach, Mark James, Barry Ker, Anne Minter, Steve Griffin, Ray Robinson, Ian Perkins, Des White, Ray White, Roger Mattiskie.

SUNSHINE STATE JACK FILES MEMORIAL CONTEST, 1982

Results:

Section 1a Transmitting All Bands. Al Carter, VK4LT.
Section 1b Transmitting HF Only Kevin Williamson, VK4VHW.
Section 1c Transmitting VHF/UHF Only. Bob Mann, VK4WJ.
Section 1d Transmitting All Bands Club. Mackay. VK4WIM
Section 2a Transmitting All Bands. Jim Swan, VK2BQS.
Section 3 Receiving All Bands. Nancy Heaton, L40804

Bud. VK4QY AR

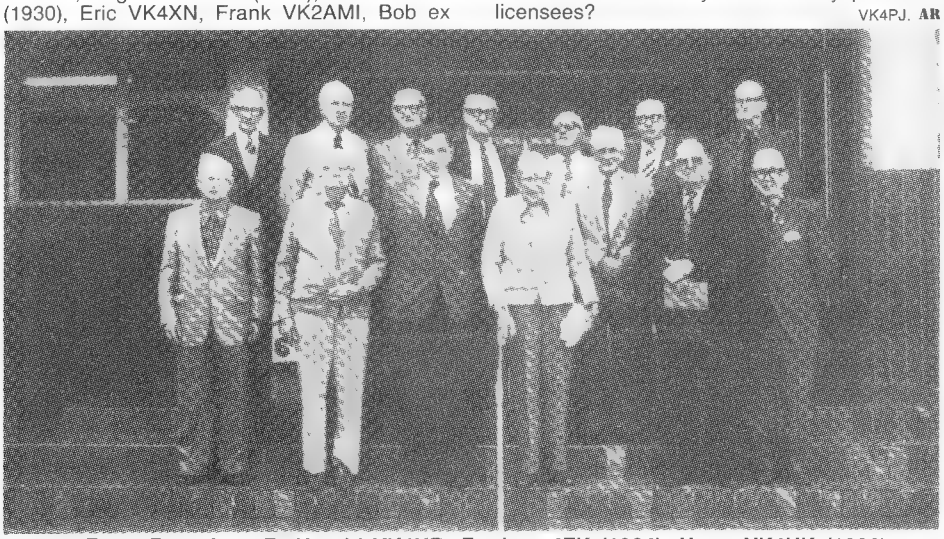
VK4 Old Timers again

The second luncheon of mostly VK4 Old Timers, pre 1930, was held at the Coorparoo RSL on May 25, 1982, with some new faces. The Qld. Div. Council was host and presented guests with a WIA Book 1 each.

President Guy and Secretary Fred were there ensuring that all enjoyed themselves.

Faces we have yet to see are Gordon VK4GH, "Nim" VK4JL, (4JL, 1930), Harold VK4DO, Leighton ex 4AN (1924), Tom ex 4NW (1930), Eric VK4XN, Frank VK2AMI, Bob ex 4BB (1930), Vic ex 4BJ (1930), Frank VK4FV, and Dave VK4ADJ (4YN 1928). Have I missed anyone??

Unfortunately we will not see Arch VK4AF or Marcus ex XQA with us. We are endeavouring to bring pre 1930 licensees together with a luncheon, now and then, and would welcome "Old Timers" from other states, as we feel sure that many have moved to the Sunshine State in their retirement. Do you know any pre 1930 licensees? VK4PJ. AR



Front Row, L to R, Harold VK4HB, Fred ex 4FK (1924), Harry VK4HK (1930), Arthur VK4FE (1937), Norm VK4ANO (4BO 1924), Jack VK4VH (1930), Ralph ex VK2HV.

Back row, L to R, Bill ex 4RO (1930), Col ex 4JG (1930), Stan VK4YF, ex 4JO (1930), Cliff VK4CG, Alf ex 4AT (1930), Arthur VK4AW, George ex 4GW (1930).

WANTED TO BUY

Ham gear, CB equipment, Hi Fi, video, car stereo, large or small quantities.

WE BUY AND SELL
ANYTHING ELECTRONIC
ANY QUANTITY
ANY CONDITION

HAM RADIO

104 Highett Street,
Richmond, Victoria.
Phone: (03) 428 8136

CLUB CORNER

QUEENSLAND RAILWAYS INSTITUTE AMATEUR RADIO CLUB

On Sunday the 15th August, 1982 at Ipswich near Brisbane, the above club was formed by licensed railway men and enthusiasts, to promote Amateur Radio within the Queensland Railways Department.

Full membership to this club will be open to people that are members of the Queensland Railways Institute or employed by the Queensland Railways Department.

Associate membership will be granted to people outside the Railways Department, provided thay join the Queensland Railways Institute as such.

Associate members have the same privileges as full members.

These privileges are, Amateur Radio Club, Sporting, Library, Social Activities, etc.

We will be using an award, that was given to us by the Ipswich Railway Amateur Radio Club, as this club does not exist any more.

This award is known as the QARAR Award and is granted to any amateur or shortwave listener, who contacts five Licensed Railway Men.

The address is: Frank Alloway VK4AFW, 22 MacAlister Street, Ipswich, 4305.

The club net is held every Wednesday evening on 3.580 MHz ± at 0900 UTC (7pm locals). So drop in.

NEW REPEATER FOR NORTHERN BRANCH (TAS)

The Northern Branch of the Tasmanian Division, WIA is currently testing a new UHF repeater — VK7RAB. Hopefully by the end of the summer VK7RAB will be permanently established and fully operational. The meeting place for the Northern Branch is now Kings Meadows High School — Launceston.

R. Harper VK7OM,
Act. Sec.

NORTH WEST RADIO SOCIETY

The number of radio amateurs in the Pilbara region of Western Australia has grown from two or three ten years ago to over fifty today.

To cater for the increasing number of amateurs in the area, the North West Radio Society was formed. The society is different from most other clubs or societies around Australia as it covers amateurs in an area geographically the size of Victoria.

The club is based in Port Hedland and because of the distance between members information is disseminated by newsletter and via the club net which meets on 3.605 MHz, Sunday 1130 UTC.

The club is split into a number of chapters representing the major towns in the area.

As with any group of amateurs their activities are very varied but one area which is increasing rapidly is VHF communication. A few years ago there was little or no VHF activity, but now, Japan is being worked regularly on 6m with low power and simple antennas. On 2m a number of repeaters are being established and fox hunts are being held.

REPEATERS:

Port Hedland	CH 8	VK6RNW
Karratha	CH 4	VK6RWP
Newman	CH 6	(Applied for)
Wickham	CH 2	VK6RWK

Amateur radio is now firmly established in the area and as the population of the area increases, albeit at a slower rate recently due to the world economic situation, then amateur radio in the area can look forward to a bright future.

VK3 WIA NOTES

DAVID JOHNSON VK3YWZ
62B Naples Rd, Mentone, 3194

OPERATING CONVENTIONS FOR USERS OF AMATEUR REPEATER STATIONS

It is probably timely to look at repeater conventions for the benefit of all members. Please remember that these are the gentlemen's agreement, and that if all members follow these guides, operation will become more pleasant for all.

PURPOSE OF REPEATERS:

Repeaters are established primarily to extend communication range of mobile and portable stations in the VHF and UHF bands.

Repeaters are also used as calling channels to establish initial contact, prior to the users switching to a simplex frequency.

Additionally, repeaters provide contact facilities for Amateurs in remote localities, where a simplex communication on VHF and UHF is not normally possible.

OPERATING CONVENTIONS:

Each transmission should not exceed two minutes.

Before replying, let the repeater "drop out" and wait at least three seconds before transmitting. This allows others immediate access to the repeater. Note that VK3REC transmits a tone pulse to indicate the timer has reset.

Do not reset the timer to extend your own transmission time.

Keep repeater contacts brief and to the point. If you have nothing to say, don't say it! Limit your group QSO to a maximum of ten minutes.

Let the Breaker go ahead immediately. He may have an urgent message. (Refer Dept. of Communications Amateur Handbook page 33-34.)

Breakers must wait until an "over" concludes before transmitting.

Do not transmit on repeater output frequencies. Use reverse facilities only to observe another station's input signal strength. If satisfactory, then QSY to a simplex channel.

Ignore annoying transmissions. Do not respond *in any manner* to any transmission not identified by a callsign.

RTTY and other coded transmissions are not permissible on voice repeaters.

The use of repeaters for liaison to establish a contact on another band is permissible, but cross band contacts using a repeater are not encouraged.

Note: Department of Communications Regulations require that all frequencies in use must be monitored and announced by both parties.

Priority must be given to normal repeater usage.

SUMMARY:

All Operators should be courteous and unselfish at all times, and always be aware of the needs of other people who have an equal right to share the repeater.

If you hear an Operator who is new to repeater operation, assist and educate him in a courteous manner, *but* make sure that you are correct first!

Always be aware that others, including new and non-amateurs, are monitoring repeaters.

The image of Amateur Radio is important.

ADVERTISERS' INDEX

ANDREWS COMMUNICATIONS SYSTEMS....34 & 35
ATN ANTENNAS....67
AUDIO TELEX COMMUNICATIONS PTY LTD....6
BAIL ELECTRONIC SERVICES....68
BIRD....52
BRIGHT STAR CRYSTALS PTY LTD....21
CHIRNSIDE ELECTRONICS....4
DICK SMITH ELECTRONICS....8 & 9
EASTERN COMMUNICATION CENTRE....48
ELMEASCO INSTRUMENTS PTY LTD....2
EMTRONICS....40
GFS ELECTRONIC IMPORTS....67
GRAEME SCOTT....4
HAM RADIO....62
IAN J. TRUSCOTT ELECTRONICS....46
KALEX....51
KNOXTRONICS....4
MAGPUBS....21 & 61
NICHOLLS COMMUNICATIONS....4
SCALAR GROUP....21
TIMEPLUS....11
TRIO-KENWOOD....20 & 47
VICOM INTERNATIONAL....5 & 7
VK2 WIA NOVICE LICENCE....46
WERNER & G. WULF....59
WILLIAM WILLIS & CO PTY LTD....46

REMOTE AREAS TO BENEFIT FROM SELF-HELP TELEVISION SCHEME

A new concept in television reception designed to help small communities in remote areas or in pockets of poor reception was announced recently by the Minister for Communications, Mr Neil BROWN.

"The new Scheme will help people in those areas to receive television quickly and economically," Mr BROWN said.

The Scheme is called the Self-help Television Reception Scheme. It has been designed to benefit people in isolated areas or those unable to receive television adequately because of topographical barriers such as hills.

Mr BROWN said that the Scheme was a major step forward to bring to people in remote areas the benefits of modern communications.

This will be done by issuing licences for commuunity groups to receive television and then retransmit it to their community.

Mr BROWN said that under the Scheme, communities would form a group to own and operate an aerial, transmitter and associated equipment.

Television signals from the nearest station would be received by the community aerial and then retransmitted to the community.

"The community may decide to receive the local commercial telecast or the ABC, or both," Mr BROWN said. "If they wish to receive both, they will need to set up two systems under the Scheme."

The community group will also need the permission of the station from which the self-help programs will originate.

COST

Costs to communities wanting to install self-help systems will vary, but the lowest "package" of equipment necessary is expected to cost less than $3000.

The costs will be kept down because technical requirements for the self-help systems will be standardised. This is expected to result in more efficient manufacturing and possible cost savings to communities because manufacturers will be able to produce larger numbers of units.

Acquiring a site for the community television equipment and installing it would require additional expenditure.

"Obviously the more subscribers there are to a system, the less each individual will have to pay," Mr BROWN said.

FOUR SYSTEMS

The local community will be able to choose from four alternative systems. Each of these four self-help "packages" is explained in technical papers now being prepared by the Department of Communications which developed the Scheme.

Briefly, the four systems available were:

- *The Basic Self-Help Television Scheme*
- *Semi-planned Television Systems*
- *Professional Television Systems*
- *Community Television Aerial (Cable Distribution) Systems*

The first three systems would use equipment known as translators to pick up signals and rebroadcast them. These would be received by individual household aerials in the normal way.

The fourth system would use a community aerial installation to receive signals and distribute them on a small-scale cable network to subscribers' homes. For economic reasons these houses should be grouped close together.

A brochure giving a brief introduction to self-help television has been printed and State Broadcasting Engineers are available to assist communities to reach decisions on the appropriate "package" for their area.

Mr BROWN said it is hoped that once applications are received, processing will take less than six months. Certain technical standards will have to be met and the Australian Broadcasting Tribunal will need to grant licences.

"But the whole basis of the Scheme is that community groups will be able to obtain a licence quickly without being involved in too many technical considerations," the Minister said.

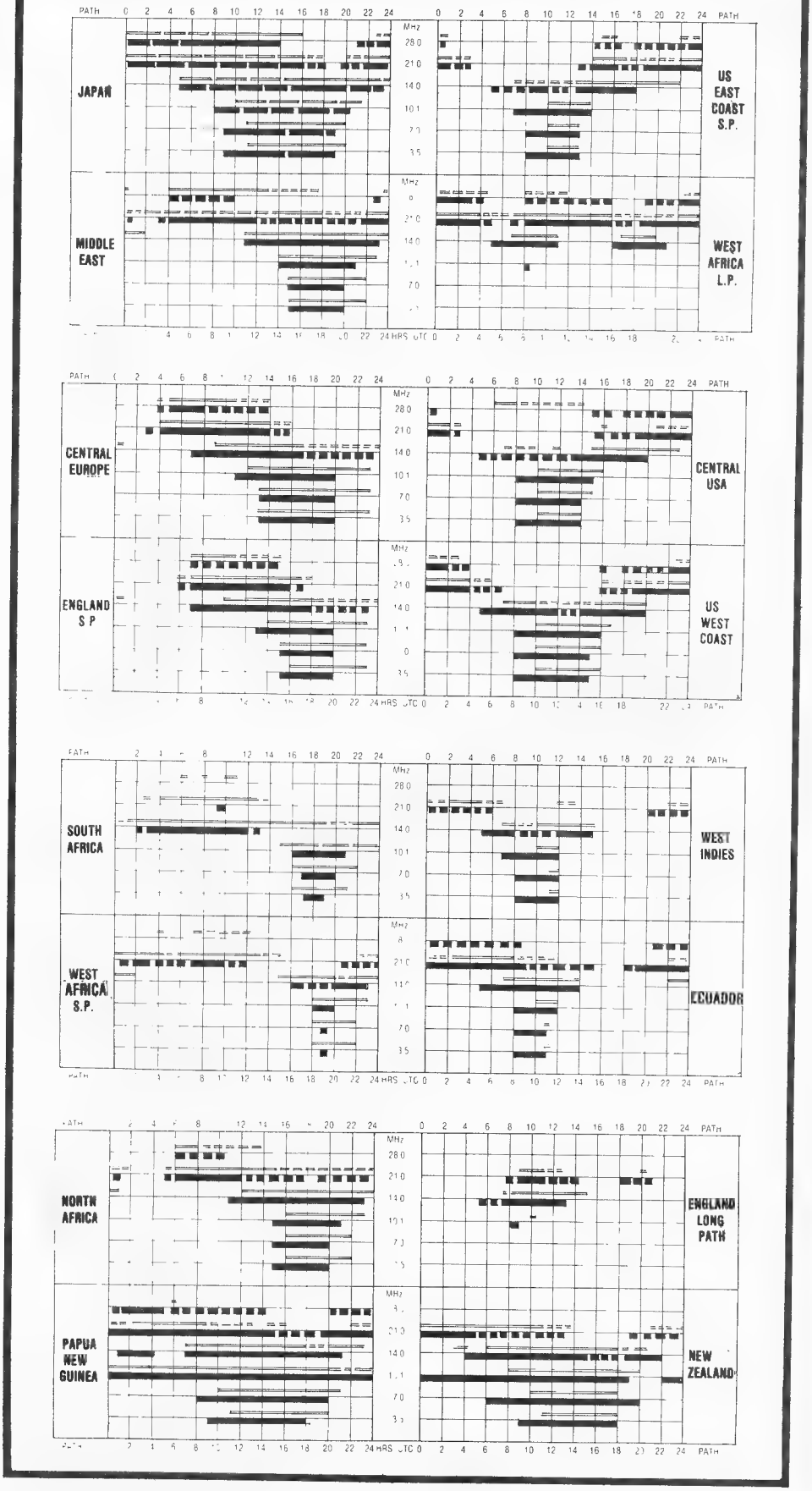
Mr BROWN said that if the area served by a system has already been earmarked as the site for the installation of a National (ABC) translator within the next ten years, it is possible for groups installing the more sophisticated Self-help Professional Television System in order to rebroadcast ABC programs to obtain reimbursement from the Commonwealth.

If the Commonwealth reimbursed the costs of such a self-help system, it would then be handed over to the Government in the normal way to form part of the ABC service.

Press Release from the Minister for Communications

IONOSPHERIC PREDICTIONS

Len Poynter
VK3BYE



LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

The Editor,
Dear Sir,

43 Astrolabe Road,
Kingsford, 2032

May I add a few words re the article (AR July, 1982) re the poem "Coming Round the Bend" and the excellent follow up letter regarding Morse Code in the PMG Department, by VK4VHL in the September issue, by giving a few details of Frank "Spru" Spruhan the composer of the poem.

I worked alongside Spru for some years in the Sydney GPO Operating Room and found him an amazing man both for his poetic ability, humour and many anecdotes outside of telegraphy.

Spru learned telegraphy before the turn of the century and followed it up with spells of operating in Bendigo, Seymour, Benalla, Geelong etc. In 1903 Spru got "Gold Fever" and followed gold mining in WA where he worked both above ground crushing batteries and below ground for some years. However, the wanderlust struck him again and he took up many occupations including, bookkeeping, Railway clerk, Telegraph Instructor, Lodge Secretary, ringbarking, fencing, clearing, roadwork contracting, bookmakers penciller, hawking Holy pictures, quarryman, carpenters labourer, hotel keeping, shopkeeper, post splitting, fruitcase making and many other diverse occupations.

Spru enlisted in World War 1 in Artillery and Signals plus a spell as "Sparks" on a troop ship. When he returned to Australia he joined the Navy but later resigned and entered the Sydney Telegraph Branch at the GPO.

Spru was never short of an audience in the lunch-room, at a Smoko or at a nearby hostelry. His stories and anecdotes were never ending. He could always be picked out from other Telegraphists by his enormous home-rolled cigarettes resembling small ice-cream cones in shape.

When Spru was approaching retiring age a committee of Telegraphists collected many of his poems and stories and published a small book entitled "Coming Round the Bend," the proceeds of the sale being handed to him on his retirement.

I, like many others miss Spru's stories and company and regret that morse code is now only used by Coastal Radio, Shipping and Amateur Radio, the latter being followed by me since 1925.

Bill Bullivant, VK2BC.

SPRU'S FAG

Have you seen Spru's fag?
It resembles a swag!
There's an ounce of fine cut,
In his smallest butt.
When the old fella smokes,
Well, everyone chokes;
There are howls of surprise
As they all rub their eyes.
At the fumes that arise!
Oh, it causes a haze,
That lingers for days
As we look with amaze.
Have you SEEN Spru's fag?
It resembles a swag!

— Reg. McLean
From booklet: "Coming Round the Bend."

The Editor,
Dear Sir,

28 Redgrave Road,
Normanhurst, 2076

A number of recent WIA broadcasts have advocated that Telecom be given the operating rights for a cable TV distribution system. If my memory serves me correctly these were FE tapes. In these tapes reference was made to "backyard operators" and the need for the highest technical standards to be maintained. I am by no means certain that commercial organisations could not maintain such standards, or that Telecom would, beyond question, maintain the highest standards.

The question arises, however, would there be would have as much leverage on Telecom as upon a commercial organisation.

As the question as to whom is to operate the system has become very political, perhaps it should not be on the broadcasts at all but confined to Amateur Radio magazine. Certainly the fibre optic cable question does not fall into that category and should be pushed with all vigour.

Barry White VK2AAB

The Editor
Dear Sir,

PO Box 74,
Mary Kathleen, 4827

In reference to your article and photograph in September AR page 54, quote "You are never too old", I must inform you as to the identity of VK4NGE. He is in fact GEORGE EVES and **not** Nelson as published.

George is the latest addition to a "family" of amateurs, comprising RICHIE VK4RR (son-in-law), PAULA VK4KIZ (daughter) and TERRY VK4ATY (son-in-law and my husband) making GEORGE (VK4NGE) NELSON? my father.

Yours sincerely,

Kathy Gardiner
(XYL VK4ATY)

The WIA is in business for more members. Please help.

WIA INSERTS INTO AR

☆

NOTICE TO WIA ZONES, CLUBS AND GROUPS

WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted ONLY direct from a Division and then only by prior arrangement with the Secretary.

All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.

HAMADS

PLEASE NOTE: If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members.
  $9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is $15 for 4 lines, plus $2 per line (or part thereof) minimum charge $15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

Amidon Ferromagnetic Cores: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R. J. & U. S. Imports, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken St, Oakley, 2223).

CB Radios $69; walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer $120; base mic., $45; ultrasonic alarm, $35; all ham bands on a single 6 ft. whip, 1.8 to 30 MHz, for base or mobile, $300; aerials, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

SWAP — SA

Kenwood TS520S TXcvr, as new, for Yaesu FT-7B (pref. with YC-7B readout. Ph. (085) 277 7057 Mon.-Fri.

WANTED — NSW

Magazines: Radio and Hobbies mags: Oct, Dec 1939; all issues 1940-46, Feb. 1947; July, Oct 1949; June 1950; June, July 1951; Jan, May, June 1954; Sept 1955; July 1956; May 1959; June, Aug, Dec 1960; Feb 1963; Electronics Aust.: Oct, Nov 1968; also interested in other old radio mags, valve data books, etc. VK2XBP, Box 131, Cooranbong 2265. Ph. (049) 77 2178.

Valves: 3 - 500Z valve. Pse contact Ray Davies, VK2FW QTHR.

Yaesu FT301D solid state Txcvr, also Yaesu Y0901 Multiscope with pan adapt. Both must be in GC. VK2DFN. Ph. (02) 449 2196.

WANTED — VIC.

Crystals: 1500 and 1700 kHz Xtals. VK3DG. QTHR. Ph. (054) 29 1362.

Kenwood CW filter type YG88C to suit TS820S. VK3AH QTHR.

Kenwood DG-5 digital display unit to suit TS-520S. Also require a quantity of basic radio test equipment suitable for beginner radio serviceman. Details to VK3OM. QTHR. Ph. (03) 560 9215.

VFO to suit FT101E Yaesu FV101B if poss. please. Ph. (03) 398 4192 A.H.

WANTED — QLD.

DRAKE "C LINE" accessories, viz CW filter, L-4B Linear, MN-2000 Tuner, noise blanker, extn speaker, etc. Also "Q" Multiplier for R-2B. Details to John, VK4SZ. QTHR. Ph (070) 61 3286.

Heavy Brass Key, also paddle, text books subject Marine Distress, DF, and Radar equip. Equip. suit ROGCP test. Roland VK4EG. QTHR. Ph. (076) 38 2819.

Kenwood SP820 ext. speak. Please contact VK4ATQ, QTHR. Ph. (07) 374 1008.

Valves — EC92, 6AB4 urgently. ATU No 8, No 10 for ex-Army B47, B48 WS. Cash or swap ATU No 6, No 9. VK4EF QTHR. Ph. (07) 38 1803.

WANTED — TAS.

Remote External VFO for Kenwood TS520s. "Urgent". Inspect or consider from anywhere any State. Top price for piece in A1 cond. Also MC50. Contact L. Lockett, 5 Wendy Place, L'ton Tas. Ph (003) 44 8972.

FOR SALE — ACT

Eddystone S680/2A Rx, $20; 5 el beam cut to 11m, easily adjusted to 10 or 15m, $70. Telescoping pipe mast, 33 feet height fully extended, $35. Calibrated attenuator, $15. TV masthead amp, Hills Mk 2, $15. Don LI0022 QTHR. Ph. (062) 88 6373.

Icom IC22A, 2m FM, 13 chan fitted (Repeaters 1-8 incl., Reverse rptr 7 and 8, Simplex 40, 50, 51). VGC. Comp with manual, mobile bracket, etc, orig pack. $170. Ian VK1ZAG QTHR. Ph. (062) 91 0483.

Icom IC-730 Mob Txcvr and PS15, as new, little use, $900 ONO. VK1DR, QTHR. Ph. (062) 49 1946.

Kenwood R-1000 0-30 MHz AM/SSB/CW Comm Rx. EC. $400. Eng./Manual. Kenwood TS520 3.5-29.7 MHz SSB/CW (600Hz filter fitted), AC/DC power supp. New 6146B finals fitted with VFO-520 match. ext. VFO and SP520 match spkr. EC, $400. Eng./Manual. Icom IC551D 50-54MHz 100W final ampl. AM/SSB/CW. Also FM board fitted, together with match AC pwr supp. Icom ICPS-20, EC, $750. Kenwood TS700A 144-148 MHz AM/SSB/CW/FM 10W final amp, EC, $450. Belcom Liner 430 432-432.48 and 435-435.48 MHz SSB/CW 10W final. 12V/2.5A DC pwr supp is req. EC, $200. Jap/Manual. All units can be supplied with match mic. and orig. cartons. John VK1FT. QTHR. Ph (062) 80 6481 BH, (062) 80 2364 AH.

FOR SALE — NSW

Amateur Station HF complete or individual on any reasonable offer basis. Yaesu Musen FR100 RX, FL100TX, Heathkit SB100 Linear, 40ft wind down 2 section mast, TH3MKIII Tribander, Ham II Rotator, BC221 freq. meter. Other bits and pieces inc. FT7 mobile. All work cond. VK2TY QTHR. Ph. (02) 84 5986.

Antennae: Two 11 element "Cushcraft" 2m antennae, TV type rotator, 50ft telescopic tubular steel mast, $190. Swan 350 selectable sideband, Xtal calibrator, VOX, mic, semi-auto key, AC power supply, manual, spare valves and relays. $310. VK2YN, QTHR.

Auto Powermeter, WAS-1, large dual meters, 0-2kW, fwd/rev, HF, VHF, UHF. New professional instrument, $150. Shure 404C hand mic (new in carton), $65. Manfred VK2KMM, Box 120, Vaucluse, 2030. Ph (02) 371 8854.

Computer 2650, fully expand EA system, 32K mem, Eprom Burner and RTTY software in ROM. Connects to XitoX terminal. Comp with lots of professional software, including Basic, Assembler, text-processor, source generator, all with orig documentation. Also available, ASR-33 printer with tape-punch and reader, connects to above computer. $600 the lot or will sep. VK2BHF. Ph. (02) 981 4762.

DX160 5 band SS comm. Rx plus match sep speak and owners manual. Freq coverage 150kHz-30MHz. $150 ONO. GC. VK2VCQ, QTHR. Ph. (063) 43 1808.

FT-101B $375, REC216, PS No 24, 19-157MHz, 5 bands, $100. HF tri-band mob. ant. $50. KW160 ATU $25, 4CX250 valve socket, chimney, blower, plate & load v/caps with L for 6m, $110. SK800 sockets, new, $70. Used, $35. Fil. trans, new, 240/6V 10A $24. Oil caps 16MF/1500V, 2 x 10 MF/1500V. 4 MF/2500V, $45. Vince, VK2VC QTHR. Ph. (027) 13 6655.

Icom IC-2A h/held 2m Txcvr. EC. Orig carton. Manual all standard acc included. $215. Also extra BP-3 Nicad Batpaks, $12 ea, BP-4 AA Batcase, $10. comb mic/spkr, $22, car charging lead $6, LC-2 soft case $8. Damien VK2AQW. Ph. (03) 890 4372 after 5pm.

Icom 730 HFSSB/CW/AM Txcvr, as new in carton, with scan mic, superb radio, $675. (02) 36 2981.

Kenwood 130S Txcvr with mic. MB-100 mobile mount, PS-30 power supply, with manuals, cartons, etc., used six weeks only, as new, $750. Azden PCS3000 FM 2m 25W output, 142-150MHz, microprocessor control, keyboard entry Txcvr, comp memory and band scan, with remote cable, brackets, manual, very best available with match antenna and coax. $295. John (02) 36 2981.

KENWOOD TS520S with CW filter, speak, SP520, VFO 520S, ant. tuner AT200 and mic. All unmarked, in exc. working order with manuals and orig. cartons. $820. Oscilloscope TRIO, latest 20MHz dual trace model CS1566 with 2 probes. As new, unmarked, very little use with manual and orig. carton. $660. VK2BZT. Ph. (02) 84 2312.

KENWOOD TS520S, PC, box, mic & manuals inc. $500 ONO. Yaesu FC902 ant tuner, still under warranty, $250 ONO. Jim VK2DFF. Ph. (02) 699 2404.

Swan 100MX SSB S/S 100W Txcvr. Ideal base/mobile unit C/W. Match pwr supply, FTy. Service manual in new cond. $600. VK2BTL. QTHR. Ph. (02) 487 3383.

SWAN ASTRO 102BX HF Txcvr with match 20A power supply and speak plus both owners and workshop manuals. This equip features twin VFOs, notch filter, full breakin, passband tuning, and built-in SWR bridge. Also a Kenwood R1000 comm RX with manual. All equip is in perfect working order and will be sold to best offer over $900 for the lot. Erik VK2BEK. QTHR (after Nov. 8).

Teletype - Model 15, EC. See working. Tons of spares. $65. Antenna, 5 band 18AVT $65. AWA carphones, low band VHF, with CCT diagram. $15 pair. VK2KFP. Ph. (02) 546 4716.

Video Camera, B&W with inbuilt monitor, $110. AX-190 amateur band Rx without spkr. $120. Buyer must pick up. Ph after 6pm (02) 604 7137.

Yaesu FRG7 Comm Rx. All bands from 0.5MHz to 29.9MHz. Mint cond. Manual and orig packing. $200. VK2DHC QTHR. Ph. (02) 913 7712.

Yaesu FT7, $300. Icom IC22S $200. Both hardly used, as new. VK2BYA. Junee. Ph. (069) 24 1469.

Yaesu FTDX 401 Txcvr. 400W PEP. New finals, FV401 VFO, Yaesu match speak, Yaesu hand mike with 18AVQ antenna. A comp station with 400W PEP. Any trial, or can be heard on the air. The lot $600. Also Yaesu FRG7 Rx $200. Ph (02) 81 1582.

FOR SALE — VIC.

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Drake R4C-T4XC-AC4PSU Txcvr. MS4 speaker. Transceive or separate operation 160 to 10m. R4C has noise blanker, 3 filters, 6, 2.4 and 1.5kHz Xtals for additional 5 SW bands. GC, all manuals. $600 ONO. Ken VK3ACS. Ph (03) 592 5960.

Duo Band Beam 15m & 10m, 3 elements on each, mono bands with sep. gamma matches. W.Wulf design, as new $85.00. VK3UV QTHR Ph: (03) 580 6424.

FT101E AC/DC fan comp, as new with cables hand and 50K boom mic. Also manual. Orig. pack. $525. VK3DMI. QTHR. (03) 288 2710.

FT101Z with fan & DC:DC converter. GC. $650 ONO. VK3AIY. QTHR. (03) 787 4969.

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KENWOOD TS120S, PS Yaesu FP301 with built in spkr, Daiwa ant tuner CL67A, Scalar helical whip for 10 and 15m, $500 the lot ONO. Stan VK3VJQ. Ph (03) 846 1792 AH, (03) 560 0611 BH.

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RTTY Equipment. ST6 demodulator (Anarts) $40. Twin 'T' Modulator (Anarts) $8. UT2 Regenerator-Speed Converter (Anarts) $30. Model 15 Teletype Printer $45, Model 14 Teletype tape reader and spare, $15. Siemens tape reperforator and spare, $15. Or $130 the lot. All in working cond, comp with circuits and information. No further use. Max VK3AFF QTHR. Ph (060) 72 5217.

RTTY Equipment. Model 15 with P/S and loop. $60. VK3ED. Ph (03) 338 2105.

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Yaesu FT101 ZD HF TXcvr, WARC bands, fan, CW filter, mic. YD148, EC, very little use. $750 ONO. Ph (052) 9 5783 BH, (052) 55 2393 AH.

Yaesu FT101E TXcvr 10-160m with 11m, as new cond. in orig carton with service manuals etc. $600 ONO. Also Dual band 10/15m beam, EC. Type CE4-2. $70 ONO. VK3VCZ. QTHR. Ph (054) 84 1777.

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FOR SALE — QLD.

FT620B Txcvr, in as new cond with 75W Lin Amp and low noise preamp, $400. Videcon camera tube with yoke and case, $75. 4CX1000A valve $25. VK4ZEO. Ph (07) 200 1406.

Kenwood TS520S DC to DC converter, two valves and mic, $500 ONO. Kenwood TR2200A 2m. Ch 40, 50, 51. Rep Ch 42, 44, 46, 48. $135 ONO. Ph (071) 43 5310 BH.

Tandy TRS-80 Model I, Level II Computer, 16K RAM, Tandy green screen monitor, tape leads, books on self teaching, games, reference and tech manuals, software. Very little use. $800 ONO. Icom IC-502 6m SSB Txcvr, mic, carry strap, 30W linear, all leads etc. EC. $200 ONO. Dick Smith Super 80 computer tech manual and basic handbook, $15 posted. Noel, VK4BTX. Ph (074) 22 2533 BH (free call).

TS520S Kenwood Txcvr $495. VFO520 $120. AT200 $135. SP520 $30. All EC. 30 day written warranty. Freight subsidised. Orig. pack. VK4SZ. Ph (070) 61 3286 (special price on complete station).

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FOR SALE — SA

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SIEMENS TELEPRINTER. Model 100, $250. Hal ST5000 Mod-Demod. $125. Kenwood TR9000 2m all mode Txcvr $400. Kenwood TS120S HF Txcvr $450. 3 el beam TH3JR.$100. Ian VK5MA. Ph (08) 212 1350 or (08) 384 6884 AH.

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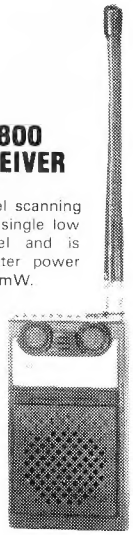

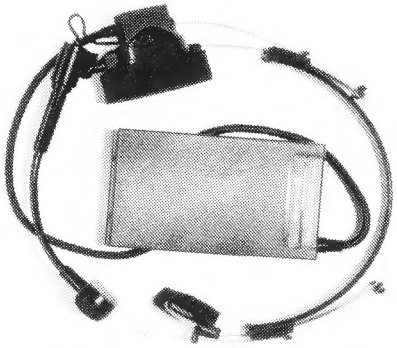

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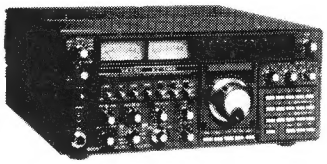

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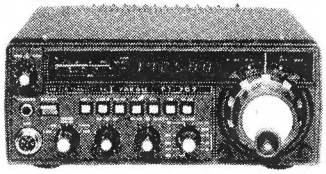

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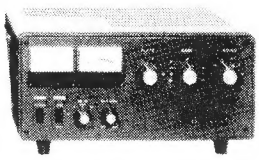

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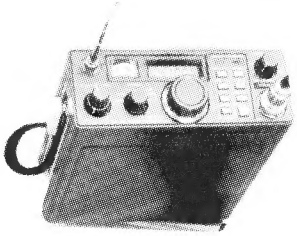

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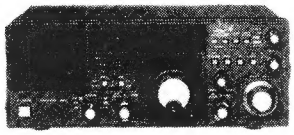

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